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By E. C. Dodds, M.V.O., D.Sc., Ph.D., M.D., F.R.C.P. Lond.

PROFESSOR OF BIOCHEMISTRY IN THE UNIVERSITY OF LONDON; DIRECTOR OF THE COURTAULD INSTITUTE OF BIOCHEMISTRY, THE MIDDLESEX HOSPITAL

It is interesting to read the views of enlightened and distinguished workers of a century ago. If, for example, we study the writings of Dr. William Prout (1831), we can see that despite his brilliant conception of the subject according to the knowledge of his day, he had not the faintest suspicion of the control that the organic chemist would obtain over the body. The case of Prout is particularly interesting since it was he who had the prolonged and bitter fight to establish the fact that the acid of the stomach was hydrochloric and not an organic acid such as lactic acid. His beautiful experiments, by which he analysed the gastric juice for total acid radicals and total basic radicals, proved quite clearly that the greatest part of the stomach acid must be hydrochloric. Yet it will be remembered that he had to face the most bitter opposition led by the formidable Claude Bernard. Here was a piece of exact chemical work which removed from the stomach a great part of its mystery, yet Prout in his lectures and writings is everlastingly warning the physician to beware of the chemist. Whilst the chemist may be able to accomplish a few minor observations, he says that Nature will never permit him to control the manufacture of the real body substances.

In defence of the workers of this age, it must be remembered that organic chemistry was literally a new science. The first conclusive experiments upon which organic chemistry was founded were those leading to the now classical synthesis of urea by Wöhler. From that date a series of organic chemists developed the analytical and synthetic side of their subject, and amongst the problems tackled was the constitution of the constituent substances of the body. It would take too long to review the development of this knowledge, but it is safe to say that to-day we possess a detailed knowledge of the structure of the main constituents of the body. Thus, the carbohydrates have been characterised completely from the analytical standpoint, and almost completely from the synthetic angle. The same applies to fats and many of the lipoids. The proteins, however, owing to their extremely complex structure, elude the chemist from the synthetic point of view, and this also applies to the big group of sterols. But, as I will show you later, the chemist has learnt so much of the structure and behaviour of the sterols that he can perform the most astonishing feats in converting them from one to another.

The science of pharmacy and pharmacology is of course very much older, and it has always attracted the physician. It is interesting to note that many of the great discoveries in pharmacology were made many hundreds of years ago on purely empirical grounds. For instance, the treatment of malaria by the use of quinine, the use of cod-liver oil, and in the eighteenth century Withering's discovery of the action of foxglove on œdema, were all based on empirical observations, and the preparation of many of the extracts and decoctions was surrounded with practices little short of witchcraft.

It naturally followed that in the nineteenth century the organic chemist should turn his new technique to the study of the active substances in these plant extracts. Thus began the great attack on the galenical products which has resulted in the substitution of substances of exact chemical constitution for the old preparations. By the end of the last century a very great amount of knowledge had been collected on the chemical constitution of the active constituents of plants, and already a number of laws had been formulated as to the relationship between chemical structure and pharmacological action. Many of the naturally occurring substances such as the salicylates were prepared synthetically, and it was shown that the action of these products of the laboratory was precisely the same as that of those prepared from natural sources. In some instances—for example, the alkaloids of opium—it was possible to have a number of substances of differing chemical constitution with roughly the same action, and this led the organic chemist to try to make artificial substances capable of therapeutic action.

Chemotherapy

Some of the earliest experiments on these lines were conducted in the search for antiseptics, and large numbers of phenols, cresols, &c., were prepared and tested. It became obvious that by modifying the molecule in an orderly manner it was possible either to enhance or diminish certain pharmacological properties, and on the basis of these experiments the science of chemotherapeutics was developed. The first important triumph in this field was undoubtedly the discovery of salvarsan by Ehrlich (1909). Working on a definite assumption that a curative agent against a spirochæte would not be effective unless it was absorbed into the body of the parasite, he passed to the experimental study of a very large series of organic compounds of arsenic. The examination and preparation of 605 compounds with the final selection of the 606th as the active substance is so well known and has been reviewed so often that we need not consider it further. I might however point out that there is a very common misunderstanding of this work. Many people who are not familiar with the original literature are under the impression that the first 605 compounds were completely inactive, whereas the 606th proved to be the long sought "silver bullet." This, of course, is not so. There was activity in a great many of the compounds, but they also possessed certain disadvantages with regard to toxicity in relation to curative effect, or defects of solubility, stability, and so on.

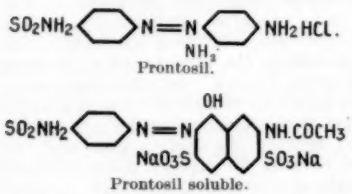
Here we have one of the first lessons of chemotherapy—namely, that the particular activity sought for is shared by a great many substances, and that it is quite possible to have organic compounds with a differing constitution all with the same therapeutic effect. An excellent example of this phenomenon is given by the recent work on the new antistreptococcal drugs.

It will be remembered that through the work of Domagk (1935) it was shown that certain complex azo-dyestuffs are capable of conferring a high degree

* A lecture given at the Institute of Pathology, St. Mary's Hospital, London, on May 25th.

of protection upon mice injected with a virulent strain of streptococci. The most potent of the series was known as Prontosil. This substance is inactive in vitro, but highly active when injected or administered by mouth. It has been used extensively in the treatment of streptococcal infections, and according to the published accounts this would appear to form one of the greatest advances in the treatment of these conditions. It was shown later by a group of French workers (Tréfouël, Nitti, and Bovet 1935) that the prontosil molecule is excreted in the urine in part at least in a disintegrated form, and that it is possible to recover from the urine the relatively simple substance *p*-aminobenzenesulphonamide (see Fig. A). This was administered to mice under the same conditions as prontosil and was found to be equally efficacious. The substance has now been used extensively in clinical work and appears to have all the advantages of the original prontosil.

FIG. A



It would be possible to quote many similar examples where the difference in molecular structure is even greater than that between prontosil and sulphonamide.

Female Sex Hormones

It is perhaps in connexion with the development of the sex hormones that the most striking and interesting lessons can be drawn from the relationship between molecular structure and function. The work on the female sex hormone has been well summarised by a number of writers, and it will only be necessary to give the very briefest outline of the earlier work in order to lead up to a study of the exact information that we have to-day.

The first major advance was made by Allen and Doisy (1923) when they showed that an alcoholic extract of the ovary or follicular fluid was capable of producing œstrus in the ovariectomised rat or mouse. This observation made it clear that a stable and active preparation could be obtained, and that its activity could be assessed with a fairly high degree of reproducibility on a test animal. Without these two factors progress would have been impossible.

Biochemists and organic chemists at once began an intensive investigation into the chemical nature of the substances present in the alcoholic extract of the ovary with the object of characterising them from the chemical point of view. When I had the distinction of lecturing in this institute some ten years ago, I described the work that had led up to the preparation of this active extract, but at that time we had no idea of the constitution of the substance or substances responsible for the activity. During the ten years that have elapsed since then the progress has been perhaps greater than in any other subject, and it is mainly with this aspect of the problem that I have to concern myself to-day. As already pointed out, ten years ago the chemist and biochemist had no conception whatsoever of the nature of the active principle present in what might be termed the "ovarian extract." The name of œstrin was suggested merely to indicate a substance extracted from the body capable of producing œstrus in animals. All that was known at this time was that it could be obtained in a form in which only carbon, hydrogen, and oxygen were present; it had been purified to a considerable extent, and the rat unit had been reduced to about one-tenth of a milligramme. But beyond this it seemed almost impossible to go, and investigators were left with an obviously impure oil.

One of the worst difficulties lay in the scarcity of material. To obtain relatively pure samples it was necessary to employ as starting material follicular fluid, and it can well be imagined that the collection of sufficient quantities of this was by no means easy. It was not until Zondek and Aschheim (1927) proved that the active principle was excreted in very large quantities in the urine of pregnancy that an adequate supply was available for the chemist. Moreover, it was apparent that the substance excreted in the urine of pregnancy was in a much purer state than the material obtainable from follicular fluid. A wholesale collection of the urine of pregnancy from both human and animal sources was arranged, and the active substance was extracted by means of a volatile solvent. In this way large quantities of relatively pure material became available, and the next step in the development of an exact knowledge of the chemical constitution of the substance occurred when it was crystallised simultaneously by Doisy (1929) in America, and by Butenandt (1929) in Germany. Marrian (1930) in England succeeded in obtaining crystals of an active substance which differed in composition from that of Doisy and of Butenandt. A great deal of further careful work showed that there were at least two substances present in the urine of pregnancy.

Now that the chemist was supplied with a crystalline substance, he was able to determine its constitution. The work of a very large group of investigators was successful in showing that the œstrogenic substances were related to the sterols. At this point it may perhaps be as well to digress for a moment on the subject of sterol chemistry.

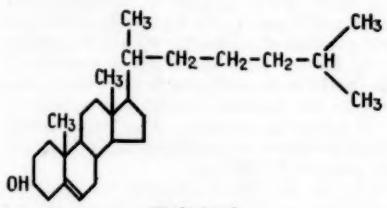
THE STEROLS

For many years the constitution of the sterols—that is substances like cholesterol, ergosterol, and the phytosterols—has been a puzzle to organic chemists. Mainly through the work of the German investigators, Windaus and Wieland, it was shown that one of the essential parts of the sterol molecule was composed of a series of six-membered carbon rings fused together with, at one point, a long side-chain attached to the condensed carbon ring system. The actual grouping of these rings was the subject of much discussion and controversy, and no clear view of the structure of the sterols was obtained until Rosenheim and King suggested that the rings were arranged in the form of cyclo-penteno phenanthrene. Experimental proof of this arrangement was rapidly forthcoming, and to-day the constitution of most of the sterols is known (Lettré and Inhoffen 1936). They all consist of the cyclo-penteno phenanthrene nucleus with a side-chain attached to the 17 carbon atom, and there are various polar groups and double bonds in the nucleus (see Fig. B). It is no exaggeration to say that but for this pioneer work on the structure of the sterols, all knowledge of the sex hormones to-day would be relatively insignificant, and it is also safe to say that many of the hormones to which we shall refer later would not be available for clinical purposes.

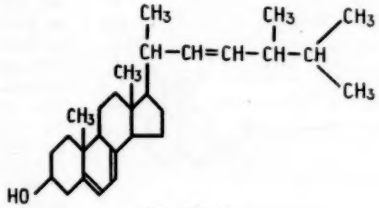
As already pointed out, the sex hormones were shown to be related to the sterols and, in fact, consist

of the sterol nucleus without its side-chain. By procedures known to the organic chemist which we need not discuss here, the structure of the three principal œstrogenic compounds are as shown in Fig. C.

FIG. B

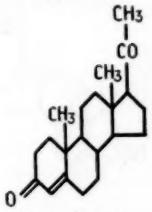


Cholesterol.



Ergosterol.

FIG. D

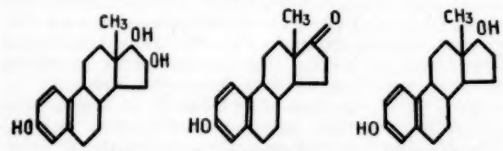


Progesterone.

Œstriol is not so potent as œstrone, and for a considerable period œstrone was regarded as the true hormone of the ovary. It was then shown, however, that if œstrone be hydrogenated it is converted into œstradiol with the formula shown above, and this substance has a potency of about five times that of œstrone. By this means the organic chemist was apparently able to improve on the products of nature; but it is interesting to note that quite recently Doisy and his collaborators (MacCorquodale et al. 1935) have isolated œstradiol itself from the follicular fluid, and there appears to be little doubt that it is secreted by the body and is the most important of the naturally occurring œstrogenic substances.

The methods of manufacture have been greatly improved. From the urine of pregnancy large quantities of œstrone are extracted, and this is converted to œstradiol in the laboratory; the œstradiol is then converted to an ester, usually the benzoate, and it is in this form that the substance

FIG. C



Œstriol. Œstrone. Œstradiol.

is available for clinical trial. Whilst œstradiol will reproduce the œstrus cycle of the castrated rodent, experiments on the higher animals show that it will not reproduce a complete cycle such as, for instance, the menstrual cycle of the primate. It is possible to produce uterine changes, but it is not possible to produce the premenstrual thickening of the mucosa which is necessary in the menstrual cycle. This requires the presence of the hormone from the corpus luteum.

PROGESTERONE

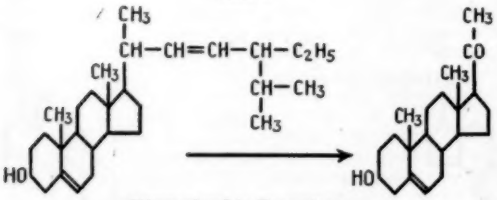
The corpus luteum hormone was isolated by Corner and his associates by experiments on the pseudopregnant rabbit (Allen and Corner 1929). It will be remembered that ovulation—that is rupture of the follicle—only occurs in the rabbit after copulation. If the male is vasectomised and therefore sterile, ovulation will occur but pregnancy will not, of course, supervene. The animal then passes into what is known as a state of pseudopregnancy, in which the uterus enlarges, and the mucosa undergoes all the progestational changes associated with pregnancy. This lasts as long as the corpus luteum persists, but when this atrophies the state of pseudopregnancy ceases, and the animal returns to the state of dioestrus. Now if an ovariectomised rabbit be taken and be injected with œstrone, the uterus does not assume the same character as in the pseudopregnant animal. It enlarges, but the thickening of the mucosa and the increase in the uterine glands does not follow as in pseudopregnancy. Corner was able to show, however, that if, in addition to œstrone, an alcoholic extract of the corpus luteum was administered, then pseudopregnancy would result. By this means the corpus luteum hormone was isolated. Attempts to determine the constitution of this hormone went through stages resembling those of the attack on the constitution of œstrone. Unfortunately the only source of the material was found to be corpora lutea. The substance was crystallised by Butenandt (1934) and its constitution was finally worked out. It has been called progesterone and has the formula shown in Fig. D.

If both œstradiol and progesterone are given to the castrated primate, or even to the castrated woman, as shown by Kaufmann (1935), the menstrual cycle can be reproduced at will. But there is no convenient source for the corpus luteum hormone, as there is for œstradiol, and it appeared that this material would always be scarce from a clinical standpoint. Here again, however, a very remarkable development in organic chemistry resulted in a solution to this economic problem.

From what I have already said about the constitution of the sterols it will be remembered that by suitable organic chemical manipulation it is possible to remove the side-chain from the 17 carbon atom, thus leaving the sterol nucleus with its associated polar groups, double bonds, &c. Now if a sterol be selected in which the polar groups and double bonds are in the same position as those of the sex hormone, it might be possible to prepare the hormone from the sterol by removing its side-chain. For instance, the sterol obtainable from soya bean—namely, stigmasterol—happens to have the same structure in the nucleus as progesterone, and by removing its side-chain it is possible to prepare the active hormone from the inert sterol. This has made a very great difference to the availability of the corpus luteum hormone. Its preparation is represented in the diagram (Fig. E). It is interesting to note in passing that but for the years of elaborate academic work on the constitution of the sterols—work which to many clinicians appears to have no practical value—the preparation of the active therapeutic agent would never have been possible. There is no doubt that the employment of œstradiol and progesterone, which are now available in stable standardised forms, has revolutionised the treatment of many gynæcological

disturbances. Thus the treatment of menopausal symptoms by œstradiol, and the treatment of amenorrhœa by combined therapy, form two of the greatest advances that have ever been made in therapeutics.

FIG. E

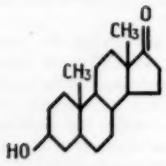


Stigmasterol to Progesterone.

Male Sex Hormones

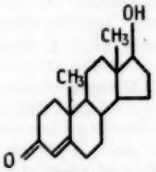
By the application of the methods of organic chemistry to biological observations, the problem of the male sex hormone has also been very largely solved. According to classical literature the first observation as to the potency of extracts of the testis was made by Brown-Séquard (1889) in his well-known experiments upon himself. In the light of modern knowledge, however, it appears almost certain that the beneficial effects described by him from extracts of testis must have been due to suggestion, since we know that if he had extracted the whole of the hormone from the quantities used it would have had no effect upon him. The first workers to prepare a uniformly stable extract of the testis were the Chicago group under Koch. They showed that an alcoholic extract of bull's testis was able to restore the comb-growth of the capon (McGee 1927). Using this method for standardisation, preparations of the product were refined, and its presence was later shown in the urine of adult males. From the urinary material Butenandt (1931) succeeded in obtaining the crystalline substance which he termed androsterone. A careful study of its properties showed that its constitution is as shown in Fig. F.

FIG. F



Androsterone.

FIG. G



Testosterone.

This material, however, is active only in very large doses, and later another substance called testosterone was extracted from the testis by Laqueur (David et al. 1935). Its constitution is shown in Fig. G, and it is interesting to note that it can be prepared by the degradation of cholesterol in the same manner that progesterone can be prepared from stigmasterol. To-day large quantities of testosterone are available, and they are prepared almost entirely from cholesterol by the method described.

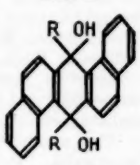
The clinical use of testosterone has not yet been fully explored, but it appears to be capable of replacing the normal testicular function in the castrate. It is also interesting to note that its ester, testosterone propionate, is much more potent than the free hormone, and the possible explanation of this probably lies along the lines of altered absorption.

A New Group of Œstrogenic Substances

We are now in a position to review the lessons which can be learnt from all this chemical work as to the relationship between chemical structure and physiological action. We have described at least three substances capable of producing œstrus, and we know that there are a number of others present in the urine of pregnancy; we have also described two substances capable of producing male sex activity, and again it is known that there are a number of others. What is still more confusing is the observation that certain male sex hormone substances appear to be capable of inducing œstrus. This observation renders the interpretation of hormone analysis in the different sexes extremely difficult.

The synthesis of the sex hormones has not yet been possible owing to the extraordinary complexity of the molecules. Since, however, at least five substances appear to be produced by the body, all of which are œstrogenic, the question of the specificity of the œstrus reaction is at once raised. An attempt was made (Cook, Dodds, Hewett, and Lawson 1934) to see whether certain synthetic compounds were capable of producing œstrus. In all the naturally occurring œstrogenic compounds the phenanthrene nucleus is present; a number of derivatives of phenanthrene were therefore investigated, and it was found that the compound 1-keto-1 : 2 : 3 : 4-tetrahydrophenanthrene was capable of producing œstrus, and in fact possessed all the properties of the naturally occurring hormone. But the activity of this compound was extremely small from a quantitative point of view when compared with that of œstrone. It is very significant that the complex changes of the œstrus cycle can be induced by so simple a molecule.

FIG. H



Certain dibenzanthracene diols.

A very large number of compounds were investigated, and one of the most interesting series was the alkyl diols of 1 : 2 : 5 : 6-dibenzanthracene with the general formula given in Fig. H. Where the alkyl substituent is methyl the compound is inactive; the corresponding di-ethyl compound, however, is active, whilst the di-*n*-propyl diol is as active as a naturally occurring œstrogenic substance, œstriol. The di-*n*-butyl is not so active, whilst the di-amyl and di-hexyl are inactive. Here is an orderly series of compounds possessing a fairly high degree of activity, yet the molecular structure differs very markedly from that of the naturally occurring substances.

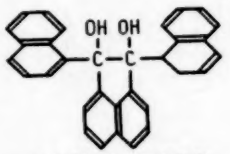
An intensive investigation was then undertaken to determine whether the phenanthrene nucleus was necessary, and it was demonstrated (Dodds and Lawson 1936) that many compounds could be obtained which showed a high degree of activity without the phenanthrene nucleus. The Table shows the activity of some of these compounds, and some of the formulæ are also reproduced (see Fig. I).

From this it can be seen that the phenanthrene nucleus is not necessary for activity since a molecule so simple as 4 : 4′-dihydroxy diphenyl shows all the activity of a naturally occurring substance.

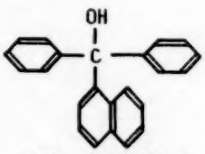
Still more recently (Dodds and Lawson 1937a) these investigations were extended, and it was shown that 4 : 4′-dihydroxy stilbene and 4 : 4′-dihydroxy tolane possessed a high degree of activity. Thus *p*-hydroxyphenyl ethyl alcohol possesses œstrus activity of a definite character although the potency of this compound is low. The observation, however,

is of considerable importance, that this complicated cycle of changes could be produced by so simple a substance. A very interesting phenomenon was encountered with another simple œstrogenic agent—

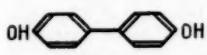
FIG. 1



1:2-dihydroxy-1:2-di-α-naphthyl acenaphthene.



Diphenyl-α-naphthyl carbinol.



4:4'-dihydroxy diphenyl.

namely, *p*-hydroxypropenyl benzene which has the formula given in Fig. J.

Certain batches of this substance were found to

Substance.	Dose in mg.	Per cent. positive.
1:2-dihydroxy-1:2-di-α-naphthyl-acenaphthene	100	100*
	10	100
1:1-di-α-naphthyl-acenaphthene	100	100
α-naphthyl benzoin	100	40
Diphenyl-α-naphthyl glycol	100	60
Diphenyl-α-naphthyl carbinol	100	100
4:4-dihydroxy diphenyl methane	100	100
Di-(*p*-hydroxyphenyl) dimethyl methane ..	100	100
Di-(*p*-hydroxyphenyl) methyl ethyl methane	100	100
Di-(*p*-hydroxyphenyl) methyl propyl methane	100	100
Di-(4-hydroxy-3-methyl phenyl) dimethyl methane	100	100
Di-(4-hydroxy-3-methyl phenyl)-1:1-cyclo hexane	100	100
2:4-dihydroxy-triphenyl methane carboxylic acid lactone	100	100
4:4'-dihydroxy benzophenone	100	60
4:4'-dihydroxy diphenyl	100	100

* Rats remained in œstrus 40 days.

be active in doses of 1 γ which indicates roughly the same activity as that of œstrone. A reinvestigation of this problem, however (Dodds and Lawson 1937b), showed that the high activity was due to an impurity produced during the method of manufacture. It thus appears that there is an entirely new group of œstrogenic substances of simple constitution, and this field is at present under intensive investigation. We cannot at the present time indicate the molecular structure necessary for œstrogenic activity, but it has become very probable that we shall be able to produce in the laboratory a synthetic simple substance that is capable of performing all the actions of œstrone with a very high activity.

FIG. J

p-hydroxy-propenyl benzene.

The purpose of this lecture has been to indicate very briefly the truly amazing growth of organic chemistry as applied to medicine and therapeutics. I have endeavoured to indicate to you the achievements of this relatively new application of chemistry, and to give you an idea of its potentialities.

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A STUDY OF CRETINISM IN LONDON

WITH ESPECIAL REFERENCE TO MENTAL DEVELOPMENT AND PROBLEMS OF GROWTH

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(*Concluded from p. 1309*)

BEFORE attempting to make in cretins a similar comparison to that just quoted for healthy children—viz., between a mental measure of development, such as the intelligence quotient, and a physical one such as height—it is advisable to consider the differential nature of growth in the body, and the distinction between growth and development. Growth cannot be regarded as a unitary process in the organism. It varies in different parts, and the rate of growth of various parts is dependent on that of others. Growth is an aspect of development, the coarse structural expression of it. Growth does not occur in a steady progression; the rate of growth of various organs and groups of organs is not only different but varies for the same organ during different periods of life. Four types of development have been described: neural (brain, cord, eye), lymphoid (intestinal lymph masses, thymus), genital (testes, ovaries, prostate, uterine tubes, seminal vesicles), general (body as a whole, respiratory and digestive organs, kidneys, aorta and pulmonary trunks, blood volume, spleen, musculature and skeleton). There are other heterogonic types among which are the curves of development of the suprarenal glands, the hypophysis, and the thyroid. The hypophysis and the thyroid both show a fairly constant increment from birth to maturity, "with little indication of more rapid growth in infancy, nor, surprisingly, a parapuberal acceleration" (Scammon). The relative increment of the hypophysis is less in post-natal life than that of the thyroid, but the form of the curve is the same. Although there are the figures of Rössle, Wehefritz, Arndt, and more recently Freeman to show the weight of the adult thyroid gland, no data are available for patients with juvenile myxœdema.

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Different organs are developing at different rates; scarcely any do so with a constant increment for age. This is, however, the case with the thyroid and the hypophysis: they show a steady increment from birth to maturity. These glands each exert an influence on the development of other organs. One might suppose that they themselves developed at an intrinsically determined rate, independently of other organs. However this may be, the extent to which these steadily growing glands influence the development of other parts can be determined by studying the effects of ablation. Since in man precise studies of differential growth of organs after thyroidectomy are impossible, the evidence in animals must be considered. Besides the many reports on amphibia, there is the work of Hammett upon groups of albino rats in whom the thyroid was removed at 23, 30, 50, 65, 75, and 100 days respectively and the organ sizes and weights determined and compared with those of unoperated controls. It was found that the relative retardation of growth which ensued increased with the age of the animal; this did not mean that the actual level of development attained was necessarily lower in the animals operated on later than in the earlier ones. Moreover, it was found that the central nervous system and the eyeballs were resistant to the retarding effect of the thyroid loss; their growth was less retarded than that of the body-weight but approximately the same as that of the body length. The reverse was the case with the lungs, heart, liver, kidneys, spleen, adrenals, and pancreas; in some of these there was not merely greater retardation than that of the body as a whole, but even retrogression. The hypophysis showed accelerated growth. It is doubtful whether these observations on the rat can be applied in detail to the phenomena of thyroid insufficiency in man. They indicate, however, that the influence of the thyroid on the growth of other organs is to produce a distortion of differential development; they suggest also that the degree of sensitivity to thyroidectomy in a group of organs is related to their normal growth coefficient. Hammett denies this, but on unconvincing grounds, as Huxley points out.

In these studies it is the increase in size of organs that has been used as the criterion of rate of development. Functional development has not been measured. A parallelism between development of function and size of organs is not easy to establish. In the case of mental functions it is especially difficult to correlate their development with that of the organic substrate.

A structural change in an organ (usually enlargement) during development will be an expression of alteration in the size of its cells, their number, and the proportion of different kinds—i.e., it expresses enlargement, multiplication, and differentiation. Together with this there will be a manifestation of entirely new functions or an alteration of previously manifest function, which may be qualitative or quantitative. In the case of the thyroid gland, for example, only a quantitative development of function need be considered (i.e., more thyroxine is secreted): in the case of the central nervous system, on the other hand, all the possibilities of functional development are realised. In considering the differential growth of organs, it is necessary to take into account their dependence on other organs, and relationship with them, and the fact that integration is itself a feature of development. This is still more necessary if functional development be considered; not only organ systems must be regarded, but the whole organism in relation to its tasks; mental development can only be assessed by considering what the environment requires of the organism, and this is true also, to a great extent, of respiratory, cardiac, alimentary, and other part-functions.

It is therefore irrational to attempt a correlation between level of mental development, which is a measure of function, and level of physical development—e.g., stature—which is a measure of structure, unless one assumes that structure is itself a measure of function, or that some other constant and measurable relationship obtains between all structure and function in the organism. This assumption is impossible at present, as the central nervous system clearly illustrates; even if the most refined methods of histological and chemical investigation be employed, we are still unable to show a constant measurable relationship between the functional capacity and the structure of normal tissue. In the case of abnormal tissues, such a correlation can in some instances be established. It may therefore be permitted, on empirical grounds, to attempt to relate the disordered function of people with thyroid deficiency to their disordered structure.

There is, however, still another difficulty here. The thyroid is not the only influence upon development. There is the pituitary, there are other endocrine glands, there are exogenous factors such as food and vitamins (cf. also Wendt); there are complicated mixtures of endogenous and exogenous factors, as in renal dwarfism; a physically or mentally defective creature may be unable, because of his defect, to get adequate nutrition, and so he becomes stunted. These possible influences are disregarded or taken as constant when one compares subthyroid patients with each other or with normal people; some of the influences, if operative, will have a differential effect on various structures and functions, so that they would complicate the relationship between particular features of cretinism. The growth of the pituitary in thyroidectomised animals (Zeckwer, Davison, Keller, and Livingood) and in subthyroid human beings lends support to the view that the symptoms of myxœdema in childhood are not due solely to the thyroid loss, excluding other endocrine changes; it is not known whether the hypophyseal growth after thyroidectomy mediates or mitigates the effect of the operation. Moreover, the thyroid itself is only a mediator; setting the tempo, rather than supplying the main stimulus. The body tends to develop along certain lines, hereditarily determined, modifiable by the environment, and worked out through variables which may be disturbed artificially (e.g., amputation of an organ or interference with its function causes other organs to develop differently); removal of, say, thyroid secretion causes the whole organism to develop differently, but still not without regard to its genotype, its inherent line of development. Thus it is to be expected that the loss of the same amount of thyroid secretion at the same stage of development would have very different results on the intellectual level of two boys, one of whom had hitherto been an imbecile and the other gifted. One cannot ignore individual differences which are irrespective of thyroid deficiency when assessing the effects of such deficiency.

It is, moreover, false to assume that all the phenomena of subthyroidism or athyroidism are in the nature more or less of complete arrest of development. This is not uncommonly taken for granted in regard to the intellectual disturbance. The phenomena are indicative in part of a perversion of function or degeneration: this is strikingly seen in the myxomatous changes from which the condition derives its name. The changes in the ossification of the bones are another illustration; it is not as if they remained

those of a child. The signs of myxœdema, as it occurs in adult life, are by no means entirely the same as those of the condition occurring during the phase of rapid development; they are metabolic and trophic, rather than developmental. It is true that development is a process which does not cease after adolescence, and that decay itself is part of it, but the relative stability of structure and function during adult life, and the relatively very slow tempo of change then, justify the above distinction. The phenomena of adult myxœdema are in part those of juvenile myxœdema or cretinism, and it might be supposed that the differences between them, obtained by subtracting the former from the latter, represented the effects of thyroid deficiency upon development. They may be due to arrest of development, or to a perversion of functions that would not be possible if development had slowed down and stability been reached. The latter changes, there is ground for supposing, are less reversible than the trophic and metabolic changes found also in adult myxœdema: the myxomatous condition of the skin, for example, responds far more to substitution therapy than the skeletal changes. The length of time that there has been thyroid deficiency during childhood is of far more importance as regards response to treatment than in the adult form of the illness. When assessing, in this investigation, the parallelism between different functional or structural effects of the deficiency, it has been impossible to ignore the factor introduced by delay in commencing treatment as well as by long interruptions in treatment (cf. Canelo and Lisser).

Finally, before attempting to compare mental measurements with stature, it is necessary to consider that the chief material substrate of mental function, the central nervous system, is of rapid growth in size, especially during the first few years, and that in this respect it is resistant to interference—e.g., by ablation of the thyroid in animals. Todd, pointing out that the brain reaches approximately full dimensional growth in six years or less, and that mental growth thereafter cannot parallel physical progress, concludes that up to the present no statistical correlation is practicable between physical growth and mental development, but that the course of each can be studied and collateral progress noted. It is, moreover, possible for development in weight to go on without concomitant development in higher functions; the brains of adult imbeciles cannot be differentiated by their weight from those of normal persons. The researches of Scholz and Zingerle, and of Wegelin, do not disclose any difference in weight between the brains of cretins and those of the rest of the population. Microscopic changes have been described but are by no means specific (Lotmar, Kena-Apajalahti). There is consequently a wide gap between the level of mental development, measured by the customary tests, and the level of neural development, measured by weight, size, or architectonics. This is what might be expected; it indicates how difficult it is to compare "mental" levels with others, as Gesell has emphasised. The general question of our methods of measuring function, especially mental function, is not suitable for examination here. Accepting these methods, the curve of mental development has been found by Richardson and Stokes to correspond to the Gompertz equation, $y=Ca^{b^x}$ where y is the growth at time x; C is the amount of growth at maturity, and b and a are constants; but that the growth curves of the abilities tested by different test-items are distinct from one another, though clustering fairly closely about the mean curve. Since, however, different tests are employed at different ages, and their standardisation is attained by working out a mean, a growth curve here is a dubious affair. The same difficulties are met with if mental development in other than intellectual respects be considered. Psychosexual development, for example, cannot be measured, though a rough parallelism between it and the development of the gonads can be recognised.

Any correlation made between the level of mental development, as measured by the Binet-Simon scale, and the standing height of the patients is therefore a statistic that is partly invalidated by the uncertainty and unsuitability of the data from which it is derived.

INFLUENCE OF TREATMENT

Much of what has been said above has a bearing upon the evaluation of treatment. Clinically, however, it is important to know whether patients who are treated promptly, adequately, and continuously, do well, or, if not, what other factors must be considered as having influenced the outcome.

In some of the cases in this series an exact record of their treatment was available, as well as a definite history as to the time when symptoms of the condition had first been noticed. In others the position was less clear. Many of them had been treated in the out-patient departments of hospitals which discard their out-patient records after ten or fifteen years, so that no medical data about the patient had survived; others had taken their tablets off and on, some with intervals of many years between medication, others with a capricious indifference that defied any precise statement as to quantity or duration of treatment. It was often impossible to discover whether the doses were of whole or desiccated gland substance.

With the data available, treatment was rated on a five-point scale:—

A: representing prompt, continuous treatment;

B: treatment promptly undertaken and continued with only brief interruptions until adult life;

C: treatment begun a year or more after the first appearance of symptoms, but carried on pretty continuously thereafter, or treatment promptly undertaken, but carried on only at long intervals until adult life;

D: treatment begun a year or more after onset and carried on only at long intervals, until adult life;

E: no treatment at all during the first twenty years of life.

The accompanying Table shows the subjects arranged in order of intelligence quotient, and classified according to adequacy of treatment, age, height, degree of physical signs, and age of recognition of symptoms (in first year, second year, or later).

It is evident that a majority of those with an intelligence quotient of above 70 had had fairly adequate treatment, but that it was by no means impossible for those who were treated promptly and continuously to remain grossly defective. In short, adequacy of treatment is an important, but not always a decisive, factor in determining the mental level attained.

There were five patients who remained grossly defective in spite of prompt and continuous treatment. One of these could not be assessed on any intelligence tests. (The statements about treatment in this case may have been incorrect as the mother had left the home. Little or no history could be obtained about the mother or her collaterals. The birth was instrumental.) In three of the remaining four cases a difficult birth was recorded; in addition, one had a spinal deformity, another had been a

TABLE SHOWING PATIENTS ARRANGED IN ORDER OF INTELLIGENCE QUOTIENTS, WITH COLUMNS AFTER THEM, SHOWING HEIGHT, DEGREE OF PHYSICAL SIGNS, ADEQUACY OF TREATMENT, AND AGE OF RECOGNITION OF SYMPTOMS (IN 1ST YEAR, 2ND YEAR, OR LATER).

Patients' initials.	Age.	I.Q.	Height.	Physical signs.	Adequacy of treatment.	Symptoms first noted.	Patients' initials.	Age.	I.Q.	Height.	Physical signs.	Adequacy of treatment.	Symptoms first noted.
G. J.	9	116	..	1	A	L.	N. B.	31	51	4 ft. 8½	1	D	1 yr.
M. A.	27	103	5 ft. 4	1	A	L.	D. J.	21	50	4 ft. 6	3	E	L.
H. P.	38	102	4 ft. 10½	3	E	L.	M. B.	6	49	—	2	B	1 yr.
C. L.	16	101	3 ft. 10½	2	E	L.	R. J.	41	49	4 ft. 10½	2	E	L.
B. A.	13	94	4 ft. 3½	2	E	L.	B. V.	32	48	4 ft. 10	2	C	L.
K. E.	26	93	5 ft. 2½	1	A	2 yr.	K. A.	40	46	4 ft. 4	3	E	L.
F. H.	50	93	4 ft. 0½	3	E	L.	L. H.	28	46	4 ft. 11½	2	E	1 yr.
L. I.	17	92	4 ft. 11½	1	A	L.	G. M.	20	45	—	3	C	L.
F. T.	22	89	4 ft. 11½	3	C	L.	S. J.	42	45	3 ft. 10½	3	E	L.
G. M.	17	88	4 ft. 11½	1	B	2 yr.	H. A.	19	44	4 ft. 6	3	E	1 yr.
G. T.	11	87	—	2	C	L.	M. G.	24	44	4 ft. 3	3	D	? 2 yr.
R. J.	16	86	4 ft. 4	2	C	L.	B. P.	21	42	4 ft. 7	2	E	L.
W. E.	23	86	5 ft.	2	B	L.	S. L.	32	41	4 ft. 5	2	E	1 yr.
A. S.	38	83	5 ft. 3½	1	C	L.	E. M.	43	40	4 ft. 0	3	D	2 yr.
B. G.	12	83	—	1	A	2 yr.	J. A.	30	39	3 ft. 10½	3	E	? 1 yr.
W. P.	23	80	5 ft.	1	A	L.	K. D.	20	39	4 ft. 5	2	E	1 yr.
L. S.	43	77	4 ft. 6½	3	C	? 2 yr.	S. M.	20	39	—	1	D	L.
H. E.	12	72	—	1	C	L.	B. E.	24	38	4 ft. 10½	1	—	L.
J. M.	7	70	—	1	A	L.	T. A.	36	38	4 ft. 1	2	E	L.
S. E.	18	70	4 ft. 10½	1	D	1 yr.	O. L.	19	34	4 ft. 0	1	B	1 yr.
C. W.	12	70	—	1	C	1 yr.	C. N.	3	33	—	1	B	?
Go. A.	11	69	—	3	D	2 yr.	G. L.	34	32	4 ft. 1	3	E	1 yr.
N. C.	26	69	4 ft. 10½	2	B	L.	T. J.	21	32	4 ft. 2	1	A	1 yr.
V. E.	32	69	4 ft. 9½	1	D	L.	W. H.	16	32	3 ft. 0	3	C	L.
L. H.	53	67	4 ft. 4	3	E	L.	M. J.	11	29	3 ft. 5	1	E	1 yr.
R. E.	22	64	4 ft. 4½	2	C	2 yr.	R. M.	58	29	3 ft. 8	3	C	L.
H. F.	40	63	4 ft. 1	3	C	1 yr.	T. B.	14	29	3 ft. 7½	2	C	2 yr.
B. M.	30	62	4 ft. 0	3	D	L.	B. F.	33	27	4 ft. 0	3	E	? 1 yr.
D. F.	40	62	5 ft. 1½	2	C	L.	S. R.	14	27	4 ft. 4½	3	C	L.
G. G.	42	62	4 ft. 5½	3	C	2 yr.	C. G.	49	24	4 ft. 3½	3	E	2 yr.
A. H.	47	62	3 ft. 11	3	E	L.	K. M.	17	22	4 ft. 5	3	C	1 yr.
M. E.	24	61	4 ft. 5½	2	E	?	S. A.	24	21	4 ft. 6	1	C	L.
C. M.	27	61	4 ft. 6½	3	E	1 yr.	K. M.	31	21	4 ft. 7	2	E	? 1 yr.
R. F.	31	60	4 ft. 5	1	E	L.	S. R.	16	21	3 ft. 11½	3	D	1 yr.
F. C.	47	59	4 ft. 6	1	C	2 yr.	M. F.	40	20	4 ft. 5½	1	E	?
T. E.	42	59	5 ft. 0	1	C	L.	R. A.	27	20	3 ft. 9½	1	E	1 yr.
E. E.	32	58	4 ft. 1	3	B	1 yr.	C. S.	6	16	—	3	D	2 yr.
W. G.	34	57	4 ft. 9	1	E	L.	B. G.	26	13	4 ft. 3	1	E	L.
R. C.	27	54	5 ft. 3	3	C	1 yr.	D. E.	16	—	3 ft. 8	3	A	1 yr.
C. E.	41	52	4 ft. 5	2	E	L.							

N.B.—Adequacy of treatment is reckoned on a five-point scale of descending efficiency.
A–E (see page 7).—Physical signs of cretinism are reckoned as (1) slight or indefinite; (2) moderate and definite; (3) marked. L. = later, i.e., after second year.

difficult feeding problem in infancy, but in all three the possibility of some brain injury at birth must be considered. In the remaining case there was nothing in the family or the clinical history to account for the mental backwardness.

The five patients whose intelligence quotients were good in spite of little or no treatment showed, with one exception, well-marked physical signs of cretinism. One case (H. P., aged 34), who had had no treatment, had an intelligence quotient of 102. He had been diagnosed as juvenile myxœdema at 12 years, but, judging from the history, had shown physical signs of cretinism as an infant, and at the time of this study showed well-marked signs. No family history was

available in this case. Another case (C. L., aged 16) with an intelligence quotient of 101 had also shown physical signs from infancy, but had only had one year's treatment, from 11–12 years; the birth was reported to have been difficult; there was nothing of note in the family history. Another patient, with an intelligence quotient of 94, had had no treatment until 13 years, and very little for some years since; his mother had cretinoid features. Familial cretinism and cretinoid features in the mother were present in the fourth case (F. H.), described elsewhere. Her intelligence quotient was 93; she had well-marked signs of cretinism but had had no treatment. The fifth case showed only slight signs of cretinism and had had treatment from 3–11 years continuously; her intelligence quotient was 70.

In the foregoing the possibility of information about treatment being erroneous has to be borne in mind. Moreover, treatment may have been prompt and continuous, yet the doses given inadequate: Nobel lays stress on this point. And, finally, there were doubtless differences in the degree of the hypothyroidism—in some total athyroidism, in others mild deficiency—and differences in age of onset which were important, but which could not be evaluated in this study.

SUMMARY

Seventy-nine patients who had been treated for cretinism were examined. Detailed psychological tests showed that it is possible for cretins to become mentally normal. The occurrence of other psychological features, including traits of personality commonly called "obsessional," was established. Comparison of present intellectual level with treatment received indicated that promptness and continuity of thyroid administration were not alone decisive in determining whether or to what extent the child would remain backward. A few who had normal intelligence quotients had had inadequate treatment; a few with low intelligence quotients had been treated regularly from the time their symptoms appeared. In the majority, however, there was a rough correspondence between adequacy of treatment and intellectual level attained. The other factors which influence psychological attainment were apparently the stage of development at which symptoms of thyroid deficiency appeared, the degree of this deficiency, the hereditary endowment of the child (as it might be inferred from the intellectual level and other specific features in his family), any cerebral damage either at birth or in infancy, and the environmental influences (including special education). Problems of development, as assessed in the somatic and the psychological spheres, also presented themselves in the inquiry and are discussed.

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(*Continued at foot of next column*)

THREE CASES OF UNUSUAL ILLNESS WITH EOSINOPHILIA

ONE WITH LESIONS IN THE LIVER RESEMBLING THOSE OF TULARÆMIA

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WE report these cases because we think they may represent examples of a disease hitherto unrecognised in this country.

Investigations by Dr. Edward Francis, of the American Institute of Health, Washington, show conclusively that this disease is not serologically identical with the tularæmia of the United States, but the histological appearances of the liver of one of our cases are so like those of granulomata due to infection with *Bacterium tularense* that we feel justified in suggesting that there may be some relation between our cases and true (American) tularæmia.

Inquiry into the histories of our patients elicited the following facts. Two (Cases 1 and 2) spent July, August, and September, 1936, on holiday in south-western Ireland and were joined by Case 3 for a fortnight in September. During this time they did a good deal of rabbit-shooting. There is no evidence of any epidemic disease among the rabbits

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at that time. None of them remembers finding any dead rabbits apart from those they had shot. On the other hand, it was stated that there was an exceptional mortality among the local cats and this was confirmed later by Dr. M. J. Twohig of Bantry, who was good enough to make inquiries for us. We have, unfortunately, failed to obtain any pathological material from cats from Bantry—it may be because our efforts were too late. It is impossible therefore to say with certainty whether the fatal disease in these cats had any relation to the illness of our patients.

At the end of September the three cases separated—one to Malvern, one to Oxford University, and one to Cambridge University. They had no subsequent contact for over two months and until their illnesses were well advanced.

Since they all suffered from abdominal symptoms and all had eosinophilia, while two had clinical signs of liver disturbance, we think it is a fair inference that they all suffered from the same disease and that that disease was acquired when they were together in September, 1936, shooting rabbits in Bantry.

THE FIRST CASE

A clergyman, aged 69, referred by Dr. J. H. D. Phelps of Malvern, was admitted to the General Hospital, Birmingham, on Nov. 27th, 1936.

Previous history.—A healthy active life but subject at rare intervals, particularly when severely constipated, to attacks of rectal pain, sometimes bad enough to make him faint. In 1925 while on holiday in Brittany he developed diarrhœa, which persisted for one month; he passed neither blood nor slime. Several members of the holiday party were affected and the illness was attributed to "dysentery." No bacteriological investigations were made. Convalescence was rapid and complete.

Present illness.—Early in October, 1936 (about seven weeks before admission to hospital) he began to feel unwell; his appetite failed and there was constant nausea, but no vomiting. The bowels were costive, as usual. Three weeks later he had a rigor, followed by violent pain above the pubis and fainting. On recovering consciousness he vomited and passed a liquid stool. Ever since he had suffered from mild abdominal discomfort, with alternating diarrhœa and constipation; his appetite continued poor, the nausea persisted, and he lost weight. For some days before admission (and possibly earlier) he had slight fever at night with a temperature usually between 99° and 100° F.

Examination.—Healthy appearance, looking rather younger than his age. Physical examination completely negative, apart from a spermatocele on the right side which had been present for many years. Temperature 98° F., pulse 80, respiration 20; blood pressure 142/90; arteries in good condition; no obvious anæmia.

Progress.—From the history, carcinoma of the colon or diverticulitis was suspected. The stools were examined on several occasions and no blood was found; radiological examination of the colon after a barium enema was normal (Dr. C. G. Teall); a serological test for cancer was negative (Mr. D. L. Woodhouse, Ph.D.) Four days after admission (Dec. 1st) his temperature at night was raised for the first time in hospital to 99° (it remained at this level for ten nights but in the mornings it was consistently normal). In view of the slight pyrexia and the negative result of preliminary investigations further examinations were carried out.

Laboratory investigations.—Cultures of the stools showed nothing abnormal. His blood-serum gave no agglutination with the typhoid or paratyphoid groups, the salmonella group (aertrycke), *B. enteritidis* Gaertner, dysentery group (Flexner V, W, X, Y, Z; Shiga, Sonne) or brucella group (*Br. abortus* Bang, *Br. melitensis*) (Dr. W. T. Hillier). A radiogram of the chest was normal. A cholecystogram showed impaired concentration but no evidence of stone. The most striking, and indeed the only significant discovery was a very pronounced eosinophilia, which remained when he appeared fully convalescent (Table I.)

TABLE I.—*Blood Counts*

—	December, 1936.				1937
	2nd.	8th.	15th.	31st.	Apr. 1st.
Leucocytes ..	11,160	9,320	22,640	9,120	—
Lymphocytes ..	17%	14%	20%	20%	40%
Monocytes ..	5·5%	3·5%	2·5%	6%	3·5%
Unsegmented polymorph and polymorphonuclear cells	34%	32·5%	20%	39%	45%
Eosinophil cells ..	43·5%	50%	57·5%	32·5%	11%
Mast cells	—	—	—	2·5%	0·5%

In view of the eosinophilia the stools were carefully examined for parasites, but none was found. On Dec. 10th he began a course of five daily injections of emetine hydrochloride, one grain: on Dec. 12th his temperature remained normal at night and did not rise again. He was discharged from hospital on Dec. 15th and made a quiet and fairly rapid convalescence.

No certain diagnosis was made at the time of his discharge; various possibilities were considered—amœbic hepatitis (following the "dysentery" in Brittany ten years previously; on this account the emetine was given); Hodgkin's disease and periarteritis nodosa. None of these appeared to offer a satisfactory explanation of his condition.

THE SECOND CASE

An Oxford undergraduate, aged 19, the son of the first patient (Dr. Phelps).

Previous history.—No illness of importance. One of a healthy family; a younger brother and sister are well. No history of tuberculosis.

Present illness.—In October, 1936, shortly after his return to Oxford, he was vaguely unwell with slight indigestion and flatulence, but he was able to go into strict training and row in a strenuous race at the end of November. The day after the race he felt weak and ill. Later he lost all energy and vitality, his appetite failed, and he began to waste. His illness was at first attributed to excessive physical strain, but he was soon found to be constantly feverish at night (temperature usually about 100° F.) and occasionally he had severe sweats.

Before his return home his father (Case 1) had been admitted to the General Hospital, Birmingham, and there was no contact between them for over two months. In view of the puzzling nature of his father's illness Dr. Phelps was asked to send a film of his blood and this showed an eosinophilia of 47·5 per cent. No parasites were found in a specimen of the stools.

Towards the end of December the illness became much more serious; the temperature was higher—sometimes reaching 103° F. at night; there was pain on both sides of the chest and in the right shoulder region; he had a troublesome cough without sputum. Dr. Phelps found some moist râles at the right base. The wasting was alarming, from 12 st. 4 lb. to 10 st. 10 lb. in the course of a few weeks. He was seen by one of us (A. P. T.) in consultation at his home on Dec. 26th. His temperature had been 104° F. the previous night, and was swinging erratically; there was slight constipation; the urine was normal. He looked gravely ill and was very pale. Impaired percussion low down in the right axillary region; a poor air-entry at the right base; some epigastric tenderness on pressure and a palpable liver 2 in. below the costal margin were the only significant findings on physical examination. It seemed possible that he had a subphrenic abscess, though this did not account satisfactorily for the eosinophilia or for the fact that his pulse had been slow throughout his illness. He was admitted to the General Hospital, Birmingham on Dec. 27th, 1936.

Radiography (Dr. J. F. Bromley) showed that the lung fields were clear; the right side of the diaphragm was displaced upwards and the liver shadow was enlarged.

A blood count showed marked leucocytosis and the eosinophilia, though still apparent, was less.

Operation.—The following day he had sharp upper abdominal pain after turning in bed; the epigastric

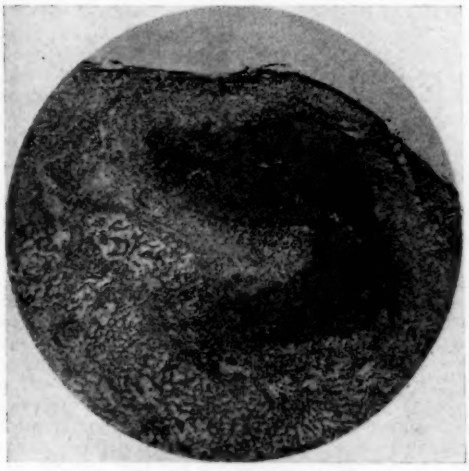

FIG. 1.—Liver nodule. (× 20.)

tenderness was increased and there was slight rigidity of the abdominal muscles. Our colleague Mr. J. B. Leather saw him and agreed that there was probably some acute inflammatory condition in the upper abdomen. Laparotomy was undertaken immediately. The liver was greatly enlarged and scattered over its surface were numerous nodules of a white or faintly yellow colour; their size varied from that of a pin-head to about a quarter

TABLE II.—*Blood Counts in Case 2*

—	December, 1936.			1937.	
	19th.	28th.	30th.	Jan. 29th.	Apr. 1st.
Red corpuscles	—	4,015,000	3,895,000	4,955,000	—
Leucocytes ..	—	18,400	15,200	7,000	—
Hæmoglobin ..	—	68%	74%	86%	—
Lymphocytes ..	8·5%	15%	10%	20·5%	27%
Monocytes ..	2%	4%	3%	2·5%	3%
Unsegmented polymorphc...	2%	5%	4%	—	—
Polymorphonuclears ..	40%	71%	65%	31·5%	56%
Eosinophil cells	47·5%	5%	17·5%	44%	13·5%
Mast cells ..	—	—	0·5%	1·5%	0·5%

of an inch in diameter. In places the nodules had coalesced to form large plaques and in others they were arranged in linear fashion as if along the course of vessels. They were firm to the touch. The spleen was not seen but appeared to be normal on palpation. Here and there along the wall of the intestine were found nodules similar to those in the liver but in general rather smaller.

Mr. Leather thought the condition might be an unusual form of tuberculosis, but in view of the history, the rarity of macroscopic tuberculosis in the liver, and of the fact that the appearance was not characteristic he consented to remove one of the nodules from the liver for detailed examination.

Further course and investigations.—The temperature fell to subnormal for four days after the operation but the general condition remained very poor. On the fifth day it rose to 99° F. and then by steps reached 103° F. on the ninth day. In view of the apparent good effect of emetine in his father (Case 1) daily injections of 1 grain were given, and the fever declined steadily. On the thirteenth day it was normal and remained so until he left the hospital on Jan. 26th, 1937—apparently convalescent but still weak. On discharge the liver was still easily palpable but much smaller. Blood counts showed a persistent eosinophilia and, in the acute stage, leucocytosis with secondary anæmia (Table II).

Agglutinations against the typhoid, dysentery, and abortus groups were all negative. Neither tubercle bacilli nor parasites were found in the stools. Blood cultures were sterile. Guinea-pigs inoculated with his blood and urine showed no pathological lesion when killed a month later.

Fresh preparations from the specimen removed at operation showed disintegrating cells and numerous Charcot-Leyden crystals (presumably a consequence of disintegration of the eosinophils). Coccidia were not found, though this possibility was carefully investigated by Dr. W. T. Hillier.

THE THIRD CASE

A Cambridge undergraduate, aged 20, who spent a fortnight in Ireland in September with the first two patients. This young man had an illness which his physician, Dr. Dundas Simpson, regarded as mild catarrhal jaundice. In reply to a letter of inquiry he gave the following account of his experience.

"So far as I know, my illness was a light attack of ordinary catarrhal jaundice. The first sign, I think, appeared on Tuesday, Nov. 10th, when I was badly constipated, and passed urine of a darkish yellow-brown colour; this did not alarm me at all, as I felt fairly fit, but in a day or two violent diarrhœa followed, the stools being of an exceptionally light colour; on Saturday evening, Nov. 14th, after a day when I hardly touched any food except dry biscuits, and during which I had felt extraordinarily sleepy, my bedmaker told me that my eyes were all yellow, and that she thought I had jaundice; the next morning I went to the college nurse who recognised jaundice as soon as she saw me. I went to bed and the doctor soon came; I told him all as related above, and he put me on a diet from which all fats were excluded; also calomel pills (2 grains nightly) and salts in the morning. I spent ten days in bed and a fortnight confined to my

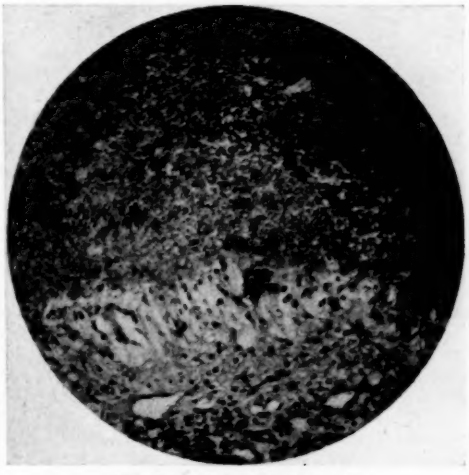

FIG. 2.—Liver nodule. (× 50.)

room; after this I kept up my diet for three weeks. The only other symptoms that I myself know of were a slow pulse and a slight itch which lasted for about two days. At no time did I feel really ill, though I had one or two rather nauseating moments the day before I went to bed."

On Jan. 4th, 1937, when the patient was apparently quite well, Dr. W. M. Cummins of Cork

kindly sent us a blood film and this again showed definite eosinophilia as follows:—

Lymphocytes	40 per cent.
Monocytes	4 ,, ,,
Unsegmented polymorph. cells	— ,, ,,
Polymorphonuclear cells	46 ,, ,,
Eosinophil cells	9·5 ,, ,,
Mast cells	0·5 ,, ,,

PATHOLOGICAL INVESTIGATION

The portion of liver removed at operation in Case 2 contains a number of small pale nodules with an average diameter of about 1·5 mm. Under a low power (Fig. 1) these present a superficial resemblance to tubercle follicles in that there is a necrotic centre infiltrated by polymorphs, surrounded by a cellular area with a number of multinucleated giant cells, and demarcated from the surrounding liver tissue by a zone of fibrous tissue in which numerous lymphocytes are seen. More critical examination under a high power, however, reveals a number of striking discrepancies from which it is clear that the lesion cannot be an ordinary tuberculous process.

In the central necrotic area the outlines of dead cells are still recognisable and along with the polymorphs there are numerous mononuclear cells and a few eosinophils. Structures resembling Charcot-Leyden crystals, possibly derived from the disintegration of eosinophils, are also present. The intermediate cellular zone (Figs. 2 and 3) shows elongated cells with pale vesicular nuclei and scanty protoplasm, rather irregular in outline and resembling neither fibroblasts nor the endothelioid cells of a tubercle follicle. These are arranged in a somewhat radial and palisade fashion and their characters suggest an origin from the reticulo-endothelial system. In this zone also there are wandering mononuclear leucocytes and multinucleated giant cells. Some of these have well-defined outlines (Fig. 2) and protoplasmic tendrils extending amongst adjacent cells, while others are much less defined and resemble multinucleated plasmodia (Figs. 3 and 4). In some instances vacuolation is present but there is no evidence of phagocytosis. The peripheral zone consists

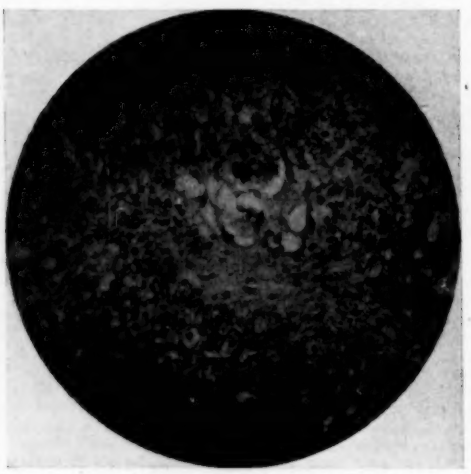

FIG. 3.—Liver nodule. (× 100.)

of a vascular, rather hyaline fibrous tissue with a considerable number of lymphocytes. In some of what appear to be older and healing lesions the fibrosis extends inwards and the central necrosis is more extensive. In these the palisade structure has to a large extent disappeared.

In sections stained by Foot's modification of the Hortega silver carbonate method delicate argentophil reticulum fibrils appear between the palisade-like cells of the intermediate zone and further out these fibrils are condensed into a peripheral feltwork which encloses the entire lesion. Here the fibrils are beginning to take the van Gieson counterstain, and the appearances indicate

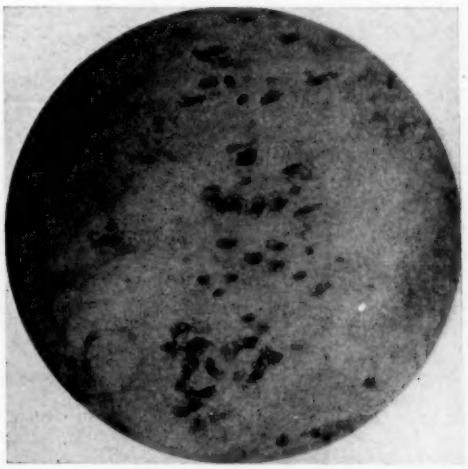

FIG. 4.—Liver nodule. (× 250.)

that the lesion is undergoing fibrosis from without inwards.

Examination of the tissue for tubercle bacilli or other micro-organisms, and for protozoal parasites proved negative.

The microscopical appearances in this case closely resemble the lesions described and illustrated by Francis and Callender (1927) as characteristic of tularæmia, and are quite unlike those of any other granulomatous process known to us.

A section was sent to Dr. Francis, and he submitted it to Dr. R. D. Lillie, of the National Institute of Health, Washington, D.C., for examination. His description of the lesion is in accordance with our own, and he comments that "The process is not inconsistent with tularæmic foci in the second month of a non-fatal illness." He was not prepared, however, to make a positive diagnosis on histological appearances alone.

In view of the remarkable resemblance of the liver lesions to those of tularæmia, serological investigations from this point of view were continued. The only antigen available was a killed non-virulent culture of *Bact. tularense*, which was kindly supplied by the Lister Institute of Preventive Medicine. With this there was no agglutination by the sera of the first two cases (Dr. W. T. Hillier). Dr. Henry kindly carried out complement-deviation tests with this culture and obtained a strongly positive reaction with the serum of Case 2, during the acute phase of his illness, and a weakly positive reaction with that of Case 1, when he was convalescent. Two control sera were entirely negative. We cannot draw any inference from these observations, for we have no information regarding the application of the complement-deviation test in the diagnosis of tularæmia.

Specimens of the sera of Cases 1 and 2 were sent to Dr. Francis of Washington, and, as already stated, he obtained no agglutination of his proved cultures of *Bact. tularense* with them. This negative result was confirmed here at a later date by Dr. J. F. D. Shrewsbury, with sera from the same patients when they were convalescent and a killed suspension of *Bact. tularense* supplied by Dr. Francis.

It was suggested to us by Dr. Francis that our cases might have been anomalous forms of trichinosis, and he sent us some material for intradermal tests. These were completely negative in Cases 1 and 2, and in April, 1937, numerous radiograms of the muscles of both patients showed no signs of any calcified cysts. Clinically our cases did not suggest trichinosis and the histology of the liver of Case 2 was quite unlike it. A few cases of this disease have been recognised in Birmingham in recent years and our colleague Dr. T. L. Hardy reported a group of them.

COMMENTARY

Recent reports from Vienna (Beiglbock 1937, David 1937) describe a considerable epidemic of tularæmia in Austria during 1936, which bacteriologically and serologically was identical with the American type, but in this epidemic cross-agglutination with *Brucella abortus* was extremely rare and then only in titres up to 1 in 50. If it be correct that sera from these cases only occasionally produced cross-agglutination with *Br. abortus* it follows that agglutination may be specific for individual members of the brucella group. In spite, therefore, of the fact that the bacteriological and serological investigations of our cases was negative, with the exception of the positive result from the complement-deviation test, we feel that the histological changes in the liver of Case 2, which in all respects exactly resemble those reported in humán and experimental tularæmia, should not lightly be set aside. It is, theoretically at least, possible that if our cases were not infected by *Bact. tularense* they may have been infected by some hitherto undiscovered member of the brucella group of organisms.

In neither the American nor the Austrian reports have we found any mention of eosinophilia, which was so remarkable a feature of our cases. It is true that there are only a few descriptions of the blood picture in the literature of tularæmia, but it is unlikely that gross eosinophilia could have escaped detectiôn.

We do not feel justified in forming any definite opinion at the present stage, but we publish the account of these cases in the hope that it may direct attention to the possibility that obscure cases of illness in this country, particularly in rural areas amongst those shooting or handling rabbits or who have been in contact with diseased cats, may be the result of infection either by *Bact. tularense* or by some other organism of the brucella group.

We shall be glad to investigate material from any suspicious cases of this kind and also from cases of human illness occurring in association with sickness in cats. Specimens of blood-serum and blood films should be addressed to the Pathological Department, The University, Gt. Charles-street, Birmingham.

It may be convenient to summarise at this stage the chief clinical features of tularæmia as reviewed by Pessin (1936). There are three types:

(1) The (most common) ulceroglandular type in which a papule forms at the site of an abrasion or insect bite and is followed by local necrosis and much swelling and caseous softening of the regional lymph glands.

(2) The ocular type, in which the main lesion is intense conjunctivitis with gross involvement of the lymph glands.

(3) The septicæmic type with anomalous symptoms.

In addition the Americans have more recently described cases in which the predominant symptoms were pulmonary (tularæmic pneumonia and pleural effusions); in Austria a considerable number have had severe sore-throat with cervical adenitis. In all forms the constitutional symptoms may be severe and in general convalescence is very slow and prolonged invalidism follows.

The diagnosis is established either by a positive agglutination against the specific organism or by animal inoculation; direct culture is rarely successful. The total mortality of the established cases appears to be about 5 per cent. The incidence of the disease is uncertain. In America in the ten years to 1934, 5426 cases were recognised—many more were certainly missed.

SUMMARY

Three cases of obscure illness are described. All the patients had eosinophilia.

The first had symptoms of irritability of the colon and mild fever for some weeks. The second had prolonged and more severe fever with symptoms of an acute abdominal crisis and signs of a right subphrenic abscess for which a laparotomy was done; the liver was found to be grossly enlarged and infiltrated with granulomata which microscopically showed the changes hitherto regarded as characteristic of infection with *Bact. tularense*. The third had an attack of what appeared to be simple catarrhal jaundice.

All three patients had been shooting rabbits in south-western Ireland at the end of September, 1936, and for ten days were in intimate contact. The first two patients had been shooting together in the same area for over two months previously. There is no evidence of any epidemic plague among the rabbits but the local cats were dying in unusual numbers at the time. The first two patients gave negative agglutinations to *Bact. tularense* and negative skin tests for trichinosis. Careful search for parasites was negative. The possible existence in the British Isles of infection with *Bact. tularense* or some allied organism is suggested.

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NON-PARASITIC EXTRADURAL CYST OF THE SPINAL CANAL

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An extradural non-parasitic cyst is one of the rarest causes of spinal compression. Elsberg (1925) included only 3 in his great series of 250 tumours of the spinal cord, and only 11 are so far recorded, including the present case.

The symptoms and signs have been so similar that it is possible to present a definite clinical picture which ought to allow of pre-operative diagnosis. The main points in the syndrome (youth, relatively rapid onset, the paradox of X ray evidences of congenital or long-standing dilatation with a short clinical history) are all exemplified in the following record.

CASE RECORD

A boy, aged 15, was admitted to the Manchester Royal Infirmary on Dec. 7th, 1935, under Dr. F. R. Ferguson, complaining of paralysis of his lower limbs.

His previous medical history had been uneventful except for colds and an attack of tonsillitis when about

9 years of age. Five months before admission he had noticed that the back of his leg always felt cold, but it caused him no inconvenience, and had it not been summer time he would not have noticed it. During the next month he had to leave work for a day on account of an aching pain in his back. His mother relieved the pain by massaging his back, but while doing so no tender areas were brought to light.

The following month his ankles were swollen on several occasions, but never painful. The swelling was never of a size to be remarked about, but he found he had not the strength to force his feet into his shoes; the difficulty he attributed (probably wrongly) to the ankle swelling. Several times when washing in the morning he staggered forward, but he always seemed to realise what had happened, and opened his eyes in time to prevent himself overbalancing.

Three months before admission his toes began to catch the ground when walking, later catching enough actually to drag. He now noticed that as he tried to stop his leg from dragging he was swaying from side to side, and it became a trial to keep his balance. Exercise always made him worse. This became more pronounced and in the next month his legs became so unsteady that he fell on several occasions, each time on to his knees, cutting and bruising them. In the following month he dare not attempt walking outside his house, because his knees seemed to lock. He had also noticed that some portions of his legs seemed numb, but had not tried to find out which portions were affected. Many times he had noticed twitchings of his legs but he cannot remember when they first came. The month before admission he was completely bedfast. He also had some difficulty in passing urine, the painful state of retention having to be reached before he was able to do so. This condition was only transient, having disappeared before admission. Two weeks before admission he noticed pins-and-needles in his right big toe.

During these five months he had lost no weight, nor was there any wasting of his legs. He had no abdominal trouble of any kind. This paralysis had never at any time had any noticeable remission. Some kyphosis had been noticed for an indefinite time, but since his father and mother both had a slight defect of the same type, it was passed by as normal. He had no headaches, no diplopia, and no dyspepsia. At this point in the history the patient was admitted to hospital.

INVESTIGATION IN HOSPITAL

The boy appeared healthy. The respiratory, circulatory, alimentary, and genito-urinary systems were normal. The abnormalities in the nervous system were confined to the lower limbs.

In the abdomen the superficial, bulbocavernosus, and cremasteric reflexes were all absent. Both legs were very weak and had a tonic overload of the "lead-pipe" type. Tendon reflexes were exaggerated at the knee and ankle, and sustained clonus was present at both patella and ankle on both sides. Plantar reflexes were extensor on both sides. Sensation: all forms except joint-position were slightly diminished, on the left below the hip and on the right below the knee. Joint sense was absent only in both great toes.

SUMMARY OF RECORDED CASES

—	Author(s).	Sex.	Age.	Length of history.	Motor weakness.	Sensory changes.	Queckenstedt block.	Exam. by lipiodol.	X ray evidence.	C.S.F. albumin (per 100 c.cm.).
1	Elsberg, Dyke, Brewer.	M.	12	3 years.	Profound.	Slight.	Complete.	Arrest.	Positive.	80 mg.
2	"	M.	15	3 months.	Considerable.	"	"	—	"	171 mg.
3	"	M.	15	9 "	Profound.	Profound.	"	Arrest.	"	109 mg.
4	" (A. S. Taylor).	F.	16	2 years.	"	Slight.	—	—	Negative.	—
5	Lehman.	M.	12	3½ months.	Severe.	"	Complete.	—	Doubtful.	Normal.
6	"	M.	17	9 "	Profound.	Incomplete.	"	Positive.	"	"
7	Mixter.	M.	26	Intermittent, 14 years.	Not described.	Not described.	None.	—	—	—
8	Krauss.	M.	46	1½ "	Profound.	"Diminished."	—	—	—	—
9	Schlesinger.	M.	—	—	"	No details.*	—	—	—	—
10	Bailey.	M.	43	2 years.	Definite.	Reduction.	No block.	Negative.	Positive.	Normal.
11	Jefferson. (Kelly)	M.	15	6 months.	Profound.	Slight.	Complete.	Arrest.	"	"

* Cyst found at post-mortem. C.S.F. = Cerebro-spinal fluid.

The fluid from the lumbar puncture was clear and colourless, with no coagulum; cells were less than 1 per c.mm.; the total protein was 25 mg. with no increase in globulin; the gold curve was 0011000000, and the Wassermann reaction negative. Radiograms were at that date thought to reveal no spinal abnormality, except some kyphosis and a trace of epiphysitis.

The Queckenstedt test showed an abrupt rise to 300 mm. on jugular compression but remained at 280 mm. for several seconds on release, and then fell very slowly to a higher level than the start. This meant an incomplete block. It may be recalled that Poppen and Hurxthal showed that, if there is an opening past the obstruction equal to the bore of the lumbar puncture needle, block may not be detectable. The case had been definitely diagnosed. The sensory loss and the suggestion of spinal block were against disseminated sclerosis.

Massage was instituted and progress observed for two weeks when it was noticed that the sensory loss had become rather more definite, a level being found around the costal margin at the segmental level T. Voluntary motor power was now almost absent in the legs. He could neither dorsiflex nor plantar flex his feet. Lateral movement and rotation were also impossible.

At this point the patient was referred to the neurosurgical service under Mr. Geoffrey Jefferson. The anomalies in the case were the relatively rapid development of a paraplegia with the very slight sensory loss. The paralysis of the lower limbs was remarkably profound for a degenerative lesion, and there was, moreover, a definite upper limit to the hypoæsthesia, slight though that was. Now it has been observed that compression of the cord may cause a remarkable degree of motor palsy and very little change in sensation (well illustrated by Pott's disease) It was difficult to suggest the nature of the compressing agent in this case, for the radiograms were thought to be uninformative. There was a general kyphosis in the thoracic region but no angulation, and a trace of epiphysitis (noted by Lehman, 1935, in one of

his cases). The patient stated that both his father and mother were notably round-shouldered. It was therefore decided to perform a cisternal puncture and insert some lipiodol. This showed a partial hold up at T. 6 also near the pedicles of T. 7 and 8 (Fig. 1). Exploration was decided upon.

OPERATION

Mr. Jefferson operated on Jan. 9th, 1936. Laminectomy was performed under ether and gas anæsthesia. During the early stages of exposure, made by Mr. G. F. Rowbotham, the posterior portions of the arches were found to be peculiarly fused, and the intervertebral ligaments seemed to be ossified in a continuous sheet. Beneath the laminæ there was another shell of rather compact bone, which was very unusual. When the laminæ were removed a large translucent cyst was at once visible. It was 9 cm. long and fully 2·5 cm. thick in the middle. It was slightly lobulated in its appearance, but this was due to strands of fibrous tissue crossing it. Once it had been exposed in its whole length it was an easy matter to dissect it off the underlying dura, any vessels being coagulated. Some fluid was aspirated from its interior and it proved to be normal cerebro-spinal fluid, for it contained 20 mg. of protein and 760 mg. of chlorides per 100 c.cm. The fluid was limpidly clear. The cyst wall was thin, giving the cyst a brilliant appearance. There were very few vessels on it. On dissection it had one point of attachment only, and that was at the 8th thoracic nerve-root on the left side. This was doubly clipped and the cyst cut free. A few drops of cerebro-spinal fluid exuded from this point of section; the cyst unquestionably communicated with the subarachnoid and dural spaces at this place. The removal of the cyst left the dura perfectly cleanly exposed. The cord did not pulsate very well, it looked anæmic, but there was free pulsation at the top end of the wound.

On looking at the radiograms again positive evidence of the presence of the cyst could be detected,

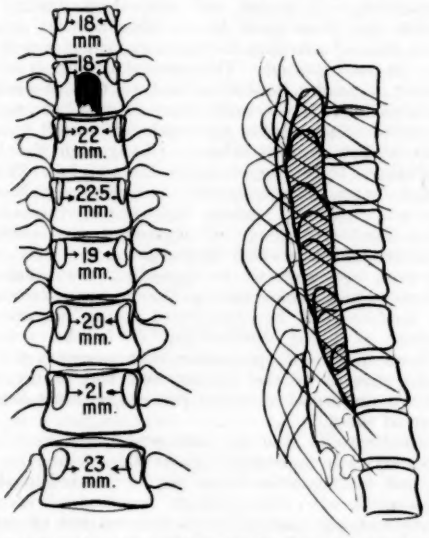

FIG. 1.—Drawings from radiograms showing widening of spinal canal, thinning and separation of pedicles, and lipiodol arrest.

for the pedicles were thinned in the classical fashion, and in the lateral view there was a most remarkable dilatation of the spinal canal. This was 3·5 cm. at its widest point, narrowing towards the lateral and lower limits (see Fig. 2).

Post-operative course.—There was rapid improvement in power. At the end of 24 hours the patient was able to lift his legs off the bed 24 times, plantarflex and dorsiflex both feet for about 1 inch. Rotation and lateral movements were present. The sensory level had already gone, and the tonic overload had disappeared. On discharge at the end of three weeks he had completely recovered the use of his lower limbs. Seen again a year later (Feb. 8th, 1937) he said he had been back at work six months as a bricksetter, and is able to play football, kicking easily with either foot. The kyphosis is a little more pronounced and the plantar response of the left foot indeterminate, but otherwise he is normal.

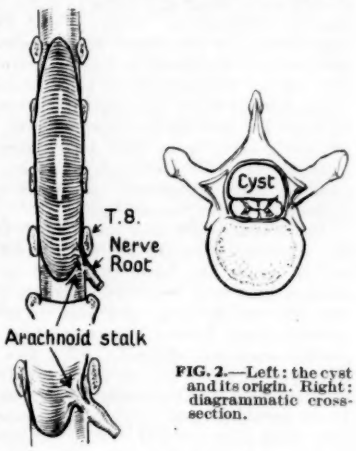

FIG. 2.—Left: the cyst and its origin. Right: diagrammatic cross-section.

Histological examination showed that the cyst wall had an endothelial lining with a fibroblastic covering reminiscent of thin dura. There was no neoplastic component.

DISCUSSION

The cases of true non-parasitic extradural cyst that I have found on record are summarised in the accompanying Table. The notable points are: sudden short history, alteration in the vertebræ, no anatomical damage to the cord with its consequent capability of recovery, the slight sensory changes, the profound motor weakness, and the adolescent age. Only in three cases—those of Mixter (1932), Krauss (1908), and Cloward (1937)—were the patients over 20 years old. In Cloward's case the cyst was found at operation (Bailey) in a man aged 43, and was lumbar in situation. Sensation was reduced below the level of the T. 12 dermatome and the C.S.F. was normal. This is an important case and comes opportunely as a corrective lest it should become too soon accepted that these cysts cannot occur except in the thoracic region and in the young. This case suggests that Roswell Park's case published by Krauss (1908) may also have been of the same kind. Lehman rejected it because of the age of the patient and because of the mention of inflammation.

Early diagnosis and treatment is essential or the cord may not recover (as in Elsberg's Case 3). In the differential diagnosis such a case might be mistaken for disseminated sclerosis, since the sensory signs are slight and the absence of pain is apt to be disarming; spinal tumours, but they are rare in adolescents; tubercular abscess, with or without X ray evidence of Pott's disease; teratoma and spinal dermoid are also possibilities. The characteristics of the extradural cyst are its large size, mid-thoracic and posterior position, its easy separation from the dura except at one point—an issuing nerve-root, usually between T. 5 and 8. The chief point in the diagnosis is the X ray evidence of long-standing dilatation of the spinal canal, thinning of the pedicles, which Elsberg, Dyke, and Brewer (1934) have proved

to be so valuable in the diagnosis of spinal tumours, a value not yet widely recognised. Kubie and Fulton (1928) and Bucy and Buchanan (1935) have shown that a similar or greater enlargement may occur with spinal teratomata but with this condition the patients usually show their first signs in early childhood rather than in adolescence. Cloward and Bucy (1937) have suggested that the cause of the osteochondritis and the juvenile kyphosis is the pressure of the cyst on the venous drainage from the vertebræ. In a later radiogram of their patient the pedicles were noticed to have become thickened out again. At the review of the present case one year later there was no evidence of osteochondritis, and the thinning of the pedicles had completely disappeared, their width appearing to be normal again.

The actual origin and mechanism of the dilatation are interesting points for speculation. The content of the cysts has been examined in only one case besides that now recorded (Elsberg's Case 3) and in that it was normal, and the same as the lumbar cerebro-spinal fluid. The content of the cyst in the present case was normal C.S.F., and the fluid below the cyst showed no chemical evidence of tumour seepage into it, the chemistry remaining normal. These points suggest that the cyst was in communication with the normal C.S.F. Elsberg conjectured that there might be a free communication, though apparently he thought his cases were closed, but the point of attachment is so small and the calibre of the communication so narrow that it might be overlooked. The almost complete block on Queckenstedt test and the normal chemistry appear to confirm the suggestion. The origin would seem to be from an arachnoidal prolongation around the posterior root, herniating backwards through a congenital defect, in this case upwards, as a finger-like process. Once this passed beyond a small size a very small neck would prevent the easy return of C.S.F. from it so that it must finally compress the spinal cord. Mechanically the cyst at first would fill, and then on flexion of the spine would be compressed so as to force some of the fluid out. This evacuation would be done against the resistance of the narrow neck. The dura constricting that neck being strong and the hernial sac weak, this action would not only enlarge the cyst and gradually increase the compression, but would keep the neck open and normal C.S.F. in the cyst. The constant swirl of C.S.F. at the neck would keep that region in complete circulation, but the part below the cyst might in some cases become stagnant.

This case is from the neurosurgical service of the Manchester Royal Infirmary, and I am indebted to Mr. Jefferson for his permission to publish it.

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BISHOP AUCKLAND COTTAGE HOSPITAL.—This hospital has to be rebuilt. The new building and equipment will cost £20,000, of which the Commissioner for Special Areas has promised to provide three-quarters.

THE TREATMENT OF CARBUNCLES

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THE modern tendency towards more conservative treatment of acute infections, coinciding with the appearance of specific antisera on the market, has led me to adopt a fairly standardised procedure in treating carbuncles. The results have been good.

SPECIFIC THERAPY

During the last few years specific antitoxic sera have been used in many staphylococcal infections, particularly in osteomyelitis, but the benefit gained has often been doubtful. Dolman (1934), however, does not exaggerate when he says that "carbuncles and staphylococcal infections of the skin and subcutaneous tissues may undergo rapid and dramatic improvement following intramuscular administration of the serum." I inject 6·0 c.cm. of anti-staphylococcal serum intramuscularly as soon as a carbuncle is diagnosed. Exceptionally (in about one-fifth of the cases) the same dose is repeated after three days; but it is rarely needed a third time. Other methods have been tried—such as larger initial doses and intravenous administration—but these are unnecessary and intravenous injection is more apt to produce reactions.

The most striking effect of the serum is the complete abolition of *pain* within 12–24 hours. Although this relief is not so rapid as that which follows incision, the many disadvantages of incision—especially the need for a general anæsthetic—outweigh this advantage. Usually a mild analgesic, such as aspirin and phenacetin, will secure rest and sleep during this period, but there need be no hesitation in using a small dose of morphia if necessary, since it will not have to be repeated. The general condition of the patient improves forthwith, and in the absence of complications the temperature returns to normal within 48 hours; toxic glycosuria, if present, usually takes a day or two longer. Changes in the local condition of the carbuncle are no less striking. Within a few hours the indurated surroundings become soft and fluctuant, while the centre, instead of being filled with plugs of semi-solid pus, becomes diffluent, and a profuse discharge occurs. In areas where it appeared to be spreading the inflammation regresses, while among the necrotic debris on the surface will be discovered many unexpected patches of living epithelium. It is the survival of these islands of epithelium that accounts for the shorter course of the disease and the better scar. Incision, and to a less extent antiseptics, must destroy many of them.

Complications due to the serum are rare. An urticarial rash appearing almost always on the 8th day and lasting a few hours has been noted in about one case in six; out-patients are warned of this. I have seen one case of serum sickness but no severe reactions.

LOCAL TREATMENT

A dressing of adhesive strapping, such as Elastoplast, is now used exclusively. It is applied directly over the carbuncle and also includes a large area of the surrounding skin. Thus on the trunk and limbs the strapping extends 4–5 in. beyond the indurated area in all directions; while for facial carbuncles numerous narrow strips are used and as much healthy skin included as possible. For example, if the

lesion is on the upper lip, both lips and the whole cheek of the affected side must be securely strapped; the tendency is to cover too small an area rather than too much. Hairy parts, such as the back of the neck, must be shaved over a large area first; and if a greasy dressing has been previously applied it is gently cleaned off with spirit. No other preliminary cleansing is done.

Among the *advantages* of this form of dressing are the following: (1) Carbuncles are usually on parts of the body where the principle of rest is hard to apply; it is exceedingly difficult to splint the face or back of the neck adequately. Further, a carbuncle is situated in the skin and subcutaneous tissues, and although sticking-plaster will give little or no support to deep structures such as bones or muscles it will act as quite an efficient splint for the skin. In fact, except for paints such as collodion, it is the one substance that will do so. It is only necessary to put a piece of it anywhere on the skin to have painful proof of the restraint it exerts whenever any attempt is made to move that part. We have, therefore, as far as possible applied local rest to our carbuncle. (2) We also rest it by diminishing the number of dressings required. The sticking-plaster is renewed only when it has become sodden with discharge. It will be found that after a time the accumulated fluid lifts it away from its moorings to the skin, and when this has happened it is no longer behaving as a splint and should be changed. Owing to this layer of fluid which separates it from the surface of the carbuncle its removal is easy and painless. For the first few days one change in each twenty-four hours is usually needed, but later it can stay untouched for three or four days. Oozing at the lower edge of the strapping, or seepage of a few drops of pus should be treated by bandaging a thick layer of wool over the whole area, while the strapping itself is left intact. (3) The sticking-plaster by its mildly irritant action produces a hyperæmia in the surrounding skin and thus improves the local blood-supply.

There are two possible disadvantages. (1) Some patients cannot stand any form of adhesive on their skin. I have had one case where this method of treatment had to be abandoned and dry dressings substituted. (2) Occasionally "satellite" boils form under the strapping. These, however, disappear as the carbuncle heals; in fact, the same dressing that heals the carbuncle will heal its satellites also. It is logical to assume that if the patient's resistance can deal with the large primary lesion it can deal with the smaller secondary lesions at the same time.

ACCESSORY METHODS

Of the accessory methods of treatment, such as irradiations and injection of metals, only two have been found to be of value. True diabetics are of course put on a suitable diet and given adequate doses of insulin, but even in non-diabetics if the carbuncle is extensive, and particularly if there is a toxic glycosuria, 5 units of insulin three times a day for a week or ten days may be of some benefit. In some cases, especially those of long duration, small doses of ultra-violet irradiation appear to improve the general condition.

Facial carbuncle is so dangerous that the patient must always be admitted to hospital however trivial the lesion seems. To secure rest for the carbuncle the patient should be (1) forbidden to speak, and (2) put on a fluid diet sucked through a straw. When it is remembered that the muscles of expression are attached to the skin in which the carbuncle is situated, the advantage of these rules is obvious. Incidentally the use of a straw largely prevents soiling of the dressing.

SUMMARY AND CONCLUSION

Recovery from carbuncle is aided by (1) injection of antistaphylococcal serum, and (2) local rest for the skin obtained by applying adhesive strapping.

In conditions of this kind it is both difficult and fallacious to assess statistically the value of any particular form of treatment, and no attempt is here made to do so. Some forty cases have now been treated by this method. My experience is confined to cases referred to hospital and these are usually severe. The fact that they have been referred implies that their own doctor has considered in-patient treatment necessary, but as confidence in the method has grown, an increasing proportion of the lesser cases have been successfully treated as out-patients.

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A CASE OF PSEUDO-HERMAPHRODITISM AND ITS TREATMENT

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A. B., aged 7, apparently a normal girl, was admitted to the District Infirmary, Ashton-under-Lyne, on Nov. 24th, 1936. The history was that a year ago, after a fall from a car, there had been a small swelling in each groin, and these had increased considerably in size in the past two months. Examination showed the presence of bilateral reducible inguinal herniæ. Nothing else abnormal was noted, and a diagnosis of bilateral inguinal hernia was made. At operation on Nov. 26th, 1936, the left inguinal canal was first explored, and, in addition to the hernial sac, an undescended testis was found. It was of normal size for a male child of the same age, and was easily reducible into the abdominal cavity. There was a clearly defined vas deferens. Orchidectomy was performed and before proceeding to the other side a careful examination of the patient was made. The pelvis showed normal female characteristics. The mons pubis was prominent and there was a wide pubic angle. The labia majora and minora were normal, as was the clitoris. A normal hymen was present and the vagina extended to a depth of about 1½ in. and had a diameter of about ½ in., which was considered normal for the child's age. The operation was continued and a testis found on the other side was also removed. Recovery was uneventful. Subsequent histological examination of the testes showed them to be of "normal testicular structure."

It may be mentioned here that after this operation, when it was suggested to the father that from the operative findings a laparotomy was considered advisable, he immediately asked whether such findings had to do with her sex. In explanation he said that she appeared strange at times as compared to either her older or younger sister. He could not define the strangeness.

On Dec. 10th, 1936, a laparotomy was performed. There was no sign of the uterus, of either uterine tube, or of either ovary. A peritoneal fold, corresponding to the round ligaments in the female, crossed the pelvic floor from one to the other internal abdominal ring, and presented a thickening at the base of its

mid-part. The depth of the ligament was about 1½ in. and it resulted in the formation of two peritoneal pouches, corresponding to the pouch of Douglas and the uterovesical pouch. In each extremity of this peritoneal fold was the corresponding vas deferens which continued about half-way towards the midline before gradually becoming indistinguishable. The appendix was long and twisted and was removed. Recovery was uneventful.

THE TREATMENT

In discussing this case probably the most important feature is the treatment. The child was a male having two undescended testes. But, on the other hand, she had been brought up as a girl and had a female pelvis, and the external genitalia were those of a normal female child. Had the testes been retained, secondary male sex characteristics would have developed at puberty—namely, male pubic hair, alteration in voice, and facial hair; also enlargement of the clitoris would probably have made operation necessary. By removing the testes those factors that produced her present female status are allowed to work unopposed. It has been advised that she be given a course of ovarian hormone medication at puberty. She will also be told that she will not menstruate nor become pregnant, but that otherwise she may live a normal female life.

It might be considered that the bilateral orchidectomy was unwarranted and too radical a procedure, but it is in accordance with the teaching of Blair-Bell (1935) that when the external genitalia and secondary sex characteristics are feminine, and the child has been brought up as a girl, removal of the testes is correct practice.

From published cases I have selected three that illustrate different points in the treatment and results. The first two are described by Mackenzie (1934) and the third by Young (1936).

1. Mackenzie's first patient was a child aged 1½ years admitted and operated on for a left inguinal hernia. Examination showed that, except that there were no testicles in the scrotum, the external genitalia were those of a normal male child. In the inguinal canal was found what appeared to be an ovary and uterine tube. By drawing on these, the fundus of an infantile uterus was first brought into view, followed by the other uterine tube and ovary. As a result of the operation the parents were advised that they should consider the child a female. When she was 3 years of age, another consultation of the honorary staff resulted in the further advice that, as the external genitalia of the child were essentially male, he should be sent to school as a boy. He appeared again at the age of 27 and was admitted to hospital with severe lower abdominal pain. A preoperative diagnosis of torsion of a retained testis was made and laparotomy was performed. Nothing to account for the acute symptoms was found. Gonads on each side of an attenuated uterus were found, and tissue from these was removed for histological examination. The report on the former was "imperfectly formed testicular tissue," and on the latter "characteristic uterine muscle and endometrium."

As regards treatment there are two essential differences between this case and the one I have reported above. These are (1) the presence of a penis and absence of a vagina, and (2) the presence of gonads which were at first considered to be ovaries. It was felt necessary to temporise in Mackenzie's case until the secondary sex characteristics developed and indicated the further treatment that might be required. The patient, actually a male, is certainly better left alone, even though there was a uterus present, indicating his pseudo-hermaphroditic state.

2. Mackenzie's second patient, brought up as a female, later developed male secondary sex characteristics. At the age of 18 she had a hypospadic phallus corresponding to the penis of a boy of 7 years, and a vagina which had a depth of 1 in. and a diameter of ½ in. There was in each inguinal region a mobile tender mass (probably a testis). Five years later she found it necessary to shave daily and there was a perceptible alteration in her voice. It is probable that had a laparotomy been performed before puberty, and gonads (if testes) removed, the secondary male sex characteristics would not have developed, and her social outlook would thus have been improved. A plastic operation on the vagina would probably have been justified at a later date.

3. The third case I shall quote is one among those reported by Young. A pseudo-hermaphrodite, brought up as a female, was first examined at the age of 18. At this time she had an enlarged clitoris amputated, and bilateral orchidectomy performed. (The testes were found in, and removed from, each inguinal canal.) Afterwards she had a plastic operation to enlarge the vagina which had a depth of only about 2 in. A laparotomy showed the absence of uterus, uterine tubes, and ovaries. As a result of the vaginal operation, during her subsequent married life, sexual intercourse was satisfactory.

This last case presents features identical to those of the one I have reported here, but the essential difference is that the removal of the testes was necessarily not performed until after puberty, and male secondary sex characteristics developed, to the disadvantage of the patient.

Finally it may be pointed out that, if the child A. B. had not had a patent processus vaginalis, the partially descended testes would probably have been overlooked until after puberty. She would then have developed male secondary sex characteristics, as in Case 3, and would be in a correspondingly less favourable situation.

CONCLUSION

The object of this paper is to suggest that in a case of pseudo-hermaphroditism such as that described, where the external genitalia and the patient's perspective are essentially feminine, treatment should be directed towards the continuance of the patient's present status, always with a view to the future development of untoward sex characteristics.

I am indebted to Mr. F. G. Ralphs for permission to publish a report of this case.

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CHRONIC HÆMOLYTIC STREPTOCOCCAL INFECTION TREATED WITH *p*-AMINOBENZENESULPHONAMIDE

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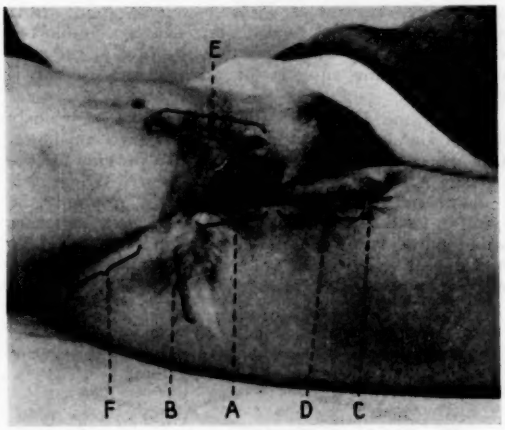
MUCH attention has recently been paid to the treatment of acute hæmolytic streptococcal infections, particularly puerperal, with Prontosil and allied drugs (Colebrook and Kenny 1936, Foulis and Barr 1937) but little work has been published on the treatment of chronic infections with these substances. The case now reported is of interest in view of its

extreme chronicity, and the rapidity with which it responded to treatment with one of these drugs. The preparation used was *p*-aminobenzenesulphonamide (Streptocide, Evans, Lescher and Webb), kindly supplied by the makers for an investigation being carried out at Queen Charlotte's Maternity Hospital.*

HISTORY

A primiparous woman, aged 26, was admitted to Queen Charlotte's Hospital Isolation Block on March 26th, 1934, on the sixth day of the puerperium, following an uncomplicated spontaneous twin delivery. She had had pyrexia since the third day.

On admission her general condition appeared fairly good. The abdomen was not tender, and moved freely on respiration. There were minor lacerations of the perineum, vagina, and cervix. The uterus was subinvoluted but not tender, and there was no extragenital spread of the infection. The lochia were purulent. Cultures from a high vaginal swab showed a heavy growth of hæmolytic



The incisions (after treatment).

streptococcus. The urine contained pus and *Bacillus coli*. Blood culture was negative.

Six days after admission she complained of some abdominal pain, and slight tenderness was noted in the left iliac fossa. The next day pain was felt in the right side of the abdomen, with tenderness in the right iliac fossa; a small right-sided extragenital spread was demonstrated. On the 18th day of the puerperium a left-sided extragenital spread was present. This left-sided mass resolved gradually, but the mass on the right became larger.

On the 66th day of the puerperium, 7½ weeks after admission, it was decided that the mass in the right iliac fossa, which appeared to be a cellulitis of the fascia over the psoas and iliacus muscles, should be explored extraperitoneally. There was at this time some flexion of the right hip, attributed to spasm of the iliopsoas, and full extension was not possible. An exploratory incision, marked A in the Figure, was made, and a large abscess cavity was entered, pus escaping freely. The temperature, which had been febrile since admission, became normal on the 6th day after this operation (75th day of the puerperium) and continued so, apart from three days' pyrexia, till the 136th day, when a low grade pyrexia began and lasted till discharge from the hospital on the 179th day of the puerperium.

On the 130th day a radiogram of the pelvis showed no sequestrum or necrosis of the pelvic bones. The same day under local anæsthesia incision B was made, communicating with A, in order to establish free drainage in the dorsal decubitus position. On leaving hospital both these wounds were discharging, and showed no sign of healing.

Cultures on many occasions showed hæmolytic streptococcus. Several examinations of the pus for *B. tuberculosis* were negative, and the Wassermann reaction was negative.

In March, 1935, a year after delivery, she was admitted to a general hospital, and wounds A and B, which had become partially bridged over, were fully opened up. A rubber drainage-tube was inserted into wound A, tunnelled under healthy skin and brought out at point C. She left hospital seven weeks later. No healing occurred, and the skin between wound A and point C broke down, leaving a larger wound D.

In April, 1936, she developed acute appendicitis, and appendicectomy was performed through incision E. This incision did not heal by first intention, and was not finally closed till three months later.

In July ultra-violet radiation was tried on the open wounds, without success. In September an abscess developed in the right flank and was opened through incision F. This also failed to heal. During this long period several radiographic examinations were carried out, but failed to demonstrate any lesion of the pelvic bones or right hip-joint.

TREATMENT WITH SULPHONILAMIDE

Nearly three years after delivery, on Feb. 15th, 1937, she was readmitted to Queen Charlotte's Hospital Isolation Block.

She looked well and was apyrexial, but wounds A, D, and F were discharging sero-purulent fluid. A and D were together 6½ in. in length and ½ in. in depth. F measured 3½ in. in length and 1½ in. in depth. A culture from these wounds showed a pure growth of hæmolytic streptococcus, but this organism was not found in cultures from the cervix. This organism and the streptococcus isolated three years previously were compared serologically. They were both members of Lancefield's group A (1933), and of Griffith's type 11. They thus appeared to be identical.

The patient remained in hospital for 19 days, during which time she received 56·0 grammes of streptocide orally in doses of 1·0 g. three times daily. For one week, in addition to the oral administration of the drug, the wounds were irrigated daily with 1 per cent. solution of streptocide, and after irrigation dusted with streptocide powder. After four days' treatment the discharge from the wounds became less. On leaving hospital there was very little discharge and the wounds were definitely healing.

After discharge from hospital she continued to take the drug orally at home, in doses of 1·0 g. three times a day at first, and later twice daily, till a further 38·0 g. had been taken.

On March 10th, 23 days after treatment began, the wounds were almost healed and cultures from them were sterile. By April 1st, in 44 days, healing was complete.

DISCUSSION

This case has been reported because of the rapidity of cure of some infected wounds of very long standing. Since two of the wounds, E and B, had healed spontaneously, such cure may, of course, have been a mere coincidence, but the improvement so soon after treatment began makes it, in our opinion, hard to invoke this as the whole explanation.

How far the local treatment of the wounds with streptocide in solution and powder contributed to the cure is an open question. It was admittedly a shot in the dark, but it seems to us to have some interest if only in view of the complete absence of any irritant or toxic effects.

While the drug was being administered in hospital no toxic effects were observed, nor were any subjective phenomena experienced. On returning home, the patient resumed an active life, whilst continuing

* The full results of this investigation are to be submitted shortly to the Therapeutic Trials Committee of the Medical Research Council, with a view to publication as a report to the Committee.

to take 1·0 g. of streptocide three times daily, at 8 A.M., 1 P.M., and 8 P.M. After the morning and midday doses she felt dizzy and light-headed. Because of the absence of symptoms after the evening dose, when she had finished her day's work and was resting, it was subsequently thought advisable to give only two doses each day, one at 6 P.M. and one just before going to bed. No further untoward symptoms were experienced after this change.

SUMMARY

A case of chronic wound infection due to the hæmolytic streptococcus, following puerperal sepsis due to the same organism three years previously, is described. Various operative procedures and actinotherapy had failed to give any relief.

Administration by mouth of *p*-aminobenzenesulphonamide, 94·0 g. in all, with local treatment with the same drug was followed by sterilisation of the wounds within three weeks and complete healing in six weeks.

Our thanks are due to Dr. Dora Colebrook for assistance with the serological investigations.

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AN IMPROVED TYPE OF UNIVERSAL FRACTURE FRAME

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The number of cases of injury to bones and joints nowadays far exceeds any previous figure in times of peace. Hospitals and nursing-homes all over the country receive a constant stream of these cases, many of them requiring immediate and prolonged treatment, and in spite of all efforts on the part of the authorities the number shows little signs of decreasing. Such injuries cannot be treated efficiently without the proper instruments and appliances being available, and one essential item is a framework over the bed on which limbs and splints can be suspended. Many types of frames have been devised, from the original wooden Balkan beam to more complicated structures. These have all served their purpose to a certain degree, but have not been wholly satisfactory for any and every occasion, being too weak, too complicated, too expensive, or too limited in their application.

In designing this frame, which was demonstrated before the orthopædic section of the Royal Society of Medicine, I have tried to produce something that would combine all the advantages and none of the disadvantages of other frames, being at the same time simple in construction and cheap to manufacture.

The advantages claimed for this frame are: (1) It is universal in its application. (2) Standard parts are available, which can be added or subtracted in much the same way as with Meccano. (3) All the parts are interchangeable. (4) Any position of limbs or body in extension or suspension can be obtained. (5) It is rigid, light, and strong. (6) It does not take up more floor space than the bed. (7) The whole bed and frame can be moved from place to place as a unit without disturbing the patient. (8) The method of fixation does not necessitate any mutilation of the bed. (9) It is easily and quickly attached to any standard iron bedstead. (10) If necessary, all four limbs can be treated at once. (11) It is cheap because all the materials used are ordinary commercial products, and there are no parts which have to be specially manufactured solely for use in the frame; and also because it will last practically indefinitely even in constant use, there being no joints or moving parts to get out of order, and no parts which will bend or break under the type of strain to which these instruments are subjected. (12) It can be made by any competent mechanic. (13) It looks neat and tidy in a ward or private room.

It will be seen in Fig. 1 that in general principle the frame is a four poster superstructure of metal tubing in which holes have been drilled at regular intervals both in the upright and horizontal members. Crossbars, with holes drilled to correspond, are attached by bolts and wing nuts which are firmly secured by hand. These bars may be of any required length or number. Provision is made for increasing the length of the bed by the angle-brackets shown at the foot. These are of standard size, can be fixed in any position or removed if not required. They also serve to protect an extra long splint from accidental knocks. A right-angled bar, supported by a stay held by wing nuts, can be added at the head of the bed for support of an arm. This bar is reversible.

The frame is much higher than any previously designed and three factors were taken into consideration when deciding this point: (1) To provide for the patient a sense of space and freedom. When it is remembered that these patients will probably be lying in such a bed for months, a low close structure will tend to become oppressive and irksome. (2) To allow easy access for X ray apparatus. (3) To provide sufficient clearance for any wall fittings,

FIG. 1

such as lamp brackets, which might get damaged when the foot of the bed has to be raised on blocks.

Materials used.—Three-quarter inch steam or gas barrel is used throughout, with an aluminium paint finish.

Two uprights for head, 7 ft. long drilled ½ in. holes, 3 in. centres.

Two uprights for foot, 7 ft. 2½ in. long drilled ½ in. holes (the difference in length is to allow for the castors at the

FIG. 2

head; if four castors are fitted all four uprights will be the same length).

Two short crossbars 2 ft. 5½ in. long drilled ½ in holes.

Two long crossbars 6 ft. 6 in. long drilled ½ in. holes.

Eight pairs of double pipe cleats, two pairs for each upright. Made from 1½ in. by ⅜ in. flat iron.

Eight 1½ in. by ⅜ in. bolts with wing nuts; on to each cleat.

Four ¾ in. angle tees for the top of the frame.

Two angle-brackets shaped and drilled as in Fig. 1. Made from 1½ in. by ¼ in. bar iron.

Two bed pulls for patient, with rubber shock-absorbers and chain.

Two 2½ in. by ⅜ in. coach bolts with wing nuts for each extension bar. (The heads of the bolts are closed round the tube on two sides to prevent turning.)

Two rubber protectors to each extension bar. (Ordinary rubber bed feet are used.)

As many extension bars as required and of any length.

Stock of 1½ in. galvanised iron rings.

To assemble.—A dozen rings are threaded on each short crossbar. Uprights and short crossbars are screwed together for head and foot. The uprights are then attached to the bed legs with cleats so that the bottom of the upright rests on the bulbous feet of the bed. The crossbars from head to foot are now screwed into angle tees at the running thread and screwed back into opposite end. They are then fixed with a locking nut. The ends of all extension bars are plugged, drilled, and tapped ⅜ in. Whitworth to take rubber protectors. The bed pulls are assembled by passing a 4 in. by ⅜ in. hook bolt through a hole in a crossbar, hook downwards, threading on two washers and a 1½ in. length of ⅞ in. Dexine rubber with ½ in. bore and securing with a wing nut.

From the above description it will be seen that, for purposes of transport, the frame is easily dismantled and can be packed into a very small bulk.

Fig. 2 shows the frame being used to suspend a large man made much heavier by reason of a Whitman plaster. It illustrates well the very heavy strains the frame is capable of bearing without the slightest fear of collapse. Suspension of heavy patients in this way relieves the nursing staff of a great deal of heavy lifting and is much safer and more comfortable for the patient. It is particularly useful for plaster-bed cases, where movement of the patient must be reduced to a minimum. This relief from heavy lifting will be most noticeably felt in smaller hospitals and nursing-homes where there is less staff available perhaps.

All the frames now in use have been made for me by the hospital engineer, and I am very grateful to him for the help and advice he has given. Those wishing to have frames made can obtain them from the Medical Supply Association, Gray's Inn-road, London, W.C.

A CASE OF SPLENECTOMY FOR LYMPHADENOMA FOLLOWED BY MYELOID LEUKÆMIA

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THE following case is unusual enough to deserve record.

Abbreviated history.—In January, 1930, a man, aged 47, was admitted to the Victoria Hospital, Swindon, with a history of severe dyspepsia for three years with one large hæmatemesis a year previously. There was a tumour in the left hypochondrium which had been diagnosed as carcinoma of the stomach. At laparotomy by Mr. Rodney Maingot the mass was found to be an enlarged spleen, adherent to the stomach and diaphragm. It was removed and, when cut into, was found to be studded with large white masses. The stomach showed no abnormality either on radiological examination or at operation. Microscopically the spleen showed the appearances typical of lymphadenoma in an advanced stage.

The patient made a satisfactory recovery from the operation and his gastric symptoms and returned to work. His blood picture showed no abnormality. On July 7th, 1935, he was readmitted on account of severe and continual bleeding from the gums; the mouth was very septic from pyorrhœa and carious teeth. There was no enlargement of any glands and nothing abnormal could be felt in the abdomen.

A blood picture showed red cells 4,250,000, hæmoglobin 47 per cent., and colour-index 0·56, with slight anisocytosis and poikilocytosis. The average size was diminished, and a few macronormoblasts were present. Only very few platelets could be seen in a 3 by 1 inch film. White cells 68,000 (polymorphs 84 per cent., large lymphocytes 2 per cent., small lymphocytes 2 per cent., hyalines and eosinophils 1 per cent. each, with 5 per cent. of myelocytes and 5 per cent. of typical myeloblasts). A provisional diagnosis of septic infection with thrombopenia was made, but on July 16th the total white cells had risen to 82,800 and thrombopenia was not present. On July 23rd the red cell count had fallen to 3,600,000, and both normoblasts and macronormoblasts were present in large numbers. The white cell count was 91,000, and the percentage of myelocytes had risen to 30 and of myeloblasts to 10. A diagnosis of myeloid leukæmia now seemed certain.

The teeth were extracted piecemeal and the hæmorrhage was controlled.

From that time onwards the blood was examined at fortnightly intervals. The condition of the patient slowly improved and his mouth became less septic. The blood picture for the next six months fluctuated somewhat, the white cells varying between 50,000 and 90,000, while the percentage of myeloid cells of all types kept at an average of 30. The red cell count remained round about 3,000,000, with numerous nucleated forms.

By March, 1936, all the teeth had been extracted; oral sepsis was not clinically evident and hæmorrhage and oozing had ceased. At this time the red cell count had risen to 5,000,000, and only a few normoblasts were present. The white cells numbered 46,000 with 80 per cent. of polynuclears and 10 per cent. of myeloid cells.

He was receiving 6 c.cm. of Campolon intramuscularly every week. Calciferol, arsenic, and iron were also given intermittently. He was then dischargd with instructions to present himself frequently for examination, but he was careless about this until June 12th, 1936, when his red cells had fallen to 2,800,000 with 33 per cent. Hb and very numerous normo- and macronormo-blasts were present. Total leucocytes 122,800 with 15 per cent. of myeloid cells. He was readmitted but continued to go downhill.

On April 27th, 1937, a blood count showed 2,675,000 red cells with marked irregularity of size and shape. There were 1,000,000 normoblasts and 500,000 macronormoblasts per c.mm., and the percentage of hæmoglobin was 22. White cells 167,000 with 40 per cent. of polynuclears, 15 per cent. of myeloblasts, and 35 per cent. of myelocytes of various types.

The patient became gradually comatose and died on May 13th, and a post-mortem examination was made 12 hours after death. I received the humerus intact, and portions of the liver and kidneys. The liver was stated to be small and pale. There was no trace of a spleniculus, the splenic fossa being represented by a mass of adhesions. No enlarged glands were seen anywhere, and there were no deposits in the mediastinum. No hæmorrhages. No specific lesions in heart or brain. One infarct in right lung.

In the humerus the marrow was hyperplastic and pale red in colour throughout. The compact bone was reduced to a thin shell. Smears and sections showed a great preponderance of the primitive stem cell—lymphoidocyte—with only a few myelocytes and myeloblasts. Normoblasts and macronormoblasts were present in moderate numbers; only a very few polynuclears and erythrocytes.

The liver showed extreme fatty degeneration and necrosis of the hepatic cells; only small islets of normal liver cells were present and there was no attempt at regeneration. The whole of the section was infiltrated diffusely with myelocytes and myeloblasts; owing to the paucity of recognisable hepatic cells it was impossible to determine whether this infiltration was originally interlobular or intracellular. The kidneys showed advanced parenchymatous and interstitial inflammation with a diffuse infiltration of myelocytes and myeloblasts.

This case presents several features of interest. Taking them in chronological order we have a long history of symptoms simulating gastric ulcer—i.e., pain, vomiting, and hæmatemesis, associated with enlargement of the spleen, adherent to the stomach—which were cured by splenectomy, there being no evidence of any abnormality of the interior of the stomach itself.

Then we have the somewhat uncommon distribution of the lymphadenoma—i.e., confined to the spleen. Neither at the time of the splenectomy nor post mortem was there any evidence of involvement of any other glands. That being so, it is evident that a cure was effected by splenectomy.

It is not suggested that the previous lymphadenoma had any causal connexion with the subsequent leukæmia. The fact that both are diseases of the reticulo-endothelial system does not take us very far in this respect. As regards the leukæmia, the occurrence of oral sepsis and hæmorrhage is not uncommon, but they afford no support for the view—now practically abandoned—that sepsis is the cause of leukæmia. The association is more probably due to the fact, as shown by experimental evidence, that leukæmic blood is deficient in both phagocytic and bacteriolytic powers.

There seems to be no theoretical reason why myeloid leukæmia should not develop in the absence of a spleen, but the occurrence must be very rare, and I have failed to find records of a similar case. The duration and course of the leukæmia were not unusual in a case where radiotherapy is not employed. In this instance it was unfortunately not available at the hospital, and the patient was too ill for transportation.

I am indebted to my colleagues, Dr. J. Lowe for notes on the clinical aspect of the case and the post-mortem examination, and Mr. Rodney Maingot for an account of his splenectomy.

MEDICAL SOCIETIES

EDINBURGH OBSTETRICAL SOCIETY

AT a meeting of this society on June 9th, with Mr. DOUGLAS MILLER, the president, in the chair, a paper on the

Modification of Cow's Milk for Infant Feeding

was read by Dr. H. L. WALLACE. The new-born infant, he said, was liable to be neglected by the medical attendant and relegated to the care of the nurse, who was given the responsibility of deciding how it was to be fed. With breast-feeding this arrangement was usually quite satisfactory, but with artificial feeding the infant became a medical problem demanding the attention of all concerned in its welfare. Opinion still differed about the best way of presenting cow's milk as a substitute for human milk, and experiments had recently been carried out at the Edinburgh Royal Hospital for Sick Children to determine the relative merits of various modifying processes in common use. The tests were designed to show the effect of these processes on the clotting of milk by rennin. It was found that such simple procedures as dilution with water and boiling reduced both the size and toughness of the milk curd, and the addition of sodium citrate had very little advantage over dilution and boiling. Acidification of milk by the addition of lactic acid abolished large clots and produced a fine granular precipitate. The addition of partially dextrinised starchy foods to milk did not affect the size and consistency of the clots, since on the addition of rennin these were found to be large and tenacious, closely resembling those of raw milk. If fresh cow's milk was to be used for infant feeding it should be diluted with water, boiled, and have added to it sugar and cream in requisite amounts: the addition of starch was undesirable; citrating and acidifying were unnecessary for normal infants. Two varieties of dried cow's milk were selected for comparison with fresh milk. In one case drying had been carried out by the roller process and in the other by the spray process. When rennin was added to milk dried by the roller process a fine precipitate was formed but no true clotting took place, whereas in milk dried by the spray process clotting did occur but the individual curds were comparatively small and soft. After gentle shaking to simulate peristaltic action both varieties of dried milk bore a striking resemblance to human milk.

Taking everything into consideration, Dr. Wallace thought that the best available substitute for human milk was a good variety of dried milk. Such milk was safe, in that it was free from tubercle bacilli and pathogenic organisms; its vitamin and iron content was adequate; it was quickly and easily prepared and thereby error was reduced to a minimum; and it had been made to resemble human milk to an extent that could never be achieved in

(*Continued at foot of next page*)

REVIEWS AND NOTICES OF BOOKS

A Social Problem Group?

Edited by C. P. BLACKER, M.D., F.R.C.P., General Secretary of The Eugenics Society. London: Humphrey Milford, Oxford University Press. 1937. Pp. 228. 15*s*.

THE idea of the existence of a group, in a community, in which all the evils are concentrated has formed the background of much sociological thought both in England and in America. The Wood report, published in 1929, laid stress on this conception which was crystallised by definition of the group as approximately the lowest 10 per cent. of the social scale in most communities. This lowest 10 per cent. is recognised by certain characteristics of its members who are said to be subnormal in intelligence, particularly liable to be insane, epileptic, or criminal, and usually paupers or unemployed. In a recently published series of essays ("A Social Problem Group?") each specified social evil has been examined with a view to ascertaining how far its occurrence is associated with the other defects which are thought to be significant. There are chapters on mental retardation, mental disorder, inebriety, prostitution, recidivism, poverty, and unemployment. Some of the writers give information about the relation of the specific evil to the mental ability of the subjects. Dr. Tylor Fox, for example, calls attention to the strong association between mental defect and epilepsy of early onset. Other writers, like Mrs. S. N. Rolfe, demonstrate a connexion between sexual promiscuity and psychopathy. A well-documented account of recidivism and the social problem group, by Dr. W. H. de B. Hubert, leaves the impression that the prospect of understanding the relation between repeated criminal offences and the individual's constitutional and environmental background is remote: it will be necessary to direct future research towards particular types of crime rather than to treat the group as a whole. Some of the essays suffer from having been based on specially selected data: Miss J. Galloway's detailed inquiry into the subsequent histories of neurasthenic paupers refers only to a highly selected group of cases, and it is hard to see what general conclusions can be derived from such information, for instance, as that a certain home is "comfortable, although bedroom crowded with beds, and the Relieving Officer reports of greyhounds being bred there." The social investigator is likely to consider home conditions unsatisfactory where vice is prevalent and such observations are likely to lead to circular arguments. Dr. A. A. E. Newth, for example, selects certain mentally defective children to be called subcultural because their families contain illiterate or defective members: thus his conclusion that subcultural families are of low social standing seems to be tautologous.

(*Continued from previous page*)

the average home. Dried milk, however, was apt to be expensive and was therefore often beyond the reach of the very homes where its use would be invaluable—namely, those of the harassed overworked mothers who had neither the time nor the facilities to make cow's milk safe and digestible for their babies. In conclusion Dr. Wallace pointed out that the perfect substitute for mother's milk did not exist and that breast-feeding should still be the aim in all cases.

The Eugenics Society deserve praise for having taken a practical line in the study of the so-called social problem group. It is clear however, from the doubt expressed in the title of the book as well as from the contributions of Dr. Caradog Jones and the editor, that the result of the investigation is mainly to draw attention to our ignorance of the real causes of social problems. The term "social problem group" is liable to be used to obscure the real complexity of the situation. To discover that mental inferiority can lead to unemployment and poverty, or to find evils like inebriety and mental instability associated, is to emphasise common knowledge. Real advances in sociology can only be made by detailed examination of environmental and genetic effects in carefully restricted fields.

Recent Advances in Endocrinology

Third edition. By A. T. CAMERON, M.A., D.Sc., F.I.C., F.R.S.C., Professor of Biochemistry, Faculty of Medicine, University of Manitoba; Biochemist, Winnipeg General Hospital. London: J. and A. Churchill. Pp. 458. 15*s*.

Endocrinology in Modern Practice

By WILLIAM WOLF, M.D., M.S., Ph.D. London: W. B. Saunders Company. Pp. 1018. 42*s*.

Endocrinology: Clinical Application and Treatment

By AUGUST A. WERNER, M.D., F.A.C.P., Assistant Professor of Internal Medicine, St. Louis University School of Medicine. London: Henry Kimpton. 1937. Pp. 672. 40*s*.

ENDOCRINOLOGY is the most recent of clinical sciences. In America its status appears to be more generally recognised than in this country; numerous clinics there deal solely with endocrine problems. This may account to some extent for the number of text-books on the subject lately published by American authors. Apart from Rolleston's historical review no recent book on clinical endocrinology has appeared from the pen of an author working in this country. Perhaps this is because here a text-book is expected to contain a series of dogmatic statements which may be committed to memory or a notebook and quoted at some future date without fear of contradiction. In the present state of endocrinology this is impossible and it may be for this reason that no English writer has yet tried to compose a text-book on the subject.

Cameron's Recent Advances is no stranger. The first edition appeared in 1933 and was immediately accepted as an authoritative review. Since the chief essential for the understanding of endocrinology is a knowledge of biochemistry—the hormones being chemical substances whose actions are achieved by a series of chemical processes—it is fitting that the scientific aspects of endocrinology should be surveyed by a biochemist. The third edition preserves the original arrangement, the pituitary being dealt with at the end of the book, though it is now recognised as being the most important of the endocrine glands. In the section on the thyroid an account is given of Mansfeld's work which suggests that thyroxine passes by way of the nerve fibrils to the interior of the tissue cells, reaching the zone of least aerobic oxidation, where its action is most effective. In the section on the pancreatic islands the introduction of protamine insulinate by Hagedorn is duly recorded, and

the sodium treatment of Addison's disease is mentioned in the chapter on the adrenals. Though little is yet known of the thymus and pineal, Rowntree's work on the effect of thymectomy and pinealectomy on successive generations of animals is summarised. The chapter on the gonads has been largely rewritten and brought up to date, and in the section on the pituitary the more recently studied principles such as prolactin and the ketogenic factor have received full recognition. The book undoubtedly represents one of the best expositions of the subject at present available.

Wolf's work seems to us too long. The attempt made to deal in detail with the physiology of the subject before discussing the clinical aspects is not altogether successful. It contains a number of loose statements. For example, on page 142 œstrin is described as being inert when administered orally, whereas on page 154 it is stated that "œstrin given by mouth is active." Anterior pituitary preparations are described as being given in doses of 1000 to 2000 *international* units, whereas no international standard has yet been devised for these preparations. Unfortunately there are so many slips of this kind as to detract seriously from the value of the book. The second part of the book which deals with the endocrine aspects of "non-endocrine" diseases is more extensive than present knowledge of the subject would warrant, and shows a lack of cautious discrimination which is unfortunate at the present time when there is danger of over-enthusiasm bringing the whole subject into disrepute. A number of useful facts are included in the book of which probably the most helpful is a series of illustrations showing the ages of appearance and closure of the epiphyses. The book should prove of interest to the endocrinologist, but cannot be recommended as an introduction to the subject for a novice.

Werner's book is very interesting. It deals particularly with the physical characteristics of endocrine disorders and contains a large number of photographs of patients illustrating the bodily changes induced by such disorders. These photographs are well chosen and add considerably to the value of the book. Perhaps too much space is occupied by detailed case-histories and too much emphasis laid on minor points such as the configuration of the hands in endocrine diseases. Unfortunately careless proof-reading mars the reader's enjoyment. Many useful facts, for instance, a table of normal measurements in relation to age, are presented, and the inclusion of such material adds to the value of the book as a work of reference.

Vade Mecum of Medical Treatment

By W. GORDON SEARS, M.D. Lond., M.R.C.P. Lond., Deputy Medical Superintendent, St. Charles' Hospital. London: Edward Arnold and Co. 1937. Pp. 355. 10*s.* 6*d.*

THIS book takes diseases in alphabetical order and confines discussion to treatment, although occasional reference is made to points of differential diagnosis. In a few places diseases of one organ—e.g., heart, ear, or eye—are grouped together, but confusion is avoided by an index at the end of the book. This index would be improved by references to treatment of such symptoms as pain, fever, and cough which are in fact dealt with quite fully in the text. Under the individual headings brevity is achieved by excluding methods of doubtful value, and the accounts are excellent summaries of accepted modern procedure in this country. Where treatment which the general practitioner can hardly be expected to perform is included this has been done intentionally so as to indicate the measures for which hospital facilities or a specialist's assistance are necessary. Proprietary preparations are included only where no equally effective official drug or mixture of drugs is known. The prescriptions given are with a few exceptions models of rational therapy. An appendix contains a table of doses and such useful facts as the normal figures for the constituents of blood and the changes in the cerebro-spinal fluid in disease. This is a book which can be thoroughly recommended to the general practitioner or to the hospital resident medical officer who requires accurate information at short notice.

Tweedy's Practical Obstetrics

Seventh edition. Revised and largely rewritten by BETHEL SOLOMONS, M.D., F.R.C.P.I., F.C.O.G., M.R.I.A., F.A.C.S. (Hon.), Consulting Gynæcologist and late Master, Rotunda Hospital, Dublin; and NINIAN MCINTIRE FALKINER, M.D., Sc.D., F.R.C.P.I., F.C.O.G., Visiting Gynæcologist, Royal City of Dublin Hospital. London: Humphrey Milford, Oxford University Press. 1937. Pp. 773. 25*s.*

THIS book, a well-established favourite, maintains its tradition as the mouthpiece of Rotunda methods. Dr. Bethel Solomons has again undertaken its editing, this time assisted by Dr. Falkiner. New chapters have been contributed by different experts on X rays in obstetrics, infant hygiene, ophthalmia, and the development of the ovum, specially written by individual authors.

Useful statistical tables are introduced, based on the wealth of clinical material to be found at the Rotunda. The text bears evidence of careful revision and the authors are to be congratulated on this as well as on the precision with which they outline the changes of their own views. Surely, however, a picture of Frommer's dilator has no place in a modern text-book, even when as here an apology is offered for its insertion. Perhaps examiners in Ireland are too historically minded. There is also some evidence of joint authorship without full collaboration—e.g., in the section on the Cæsarean operation the lower segment method is given preference in placenta prævia, whereas in the text dealing with the latter it is stated that the lower segment operation has now been abandoned owing to its additional difficulties in prævia cases. There is every reason to expect that this classic will retain its popularity.

NEW INVENTIONS

INTERCEPTOR AND REGULATOR FOR CONTINUOUS INTRAVENOUS SALINE

THE piece of apparatus illustrated will be found useful for administering continuous intravenous saline. The rate of flow can be regulated with great precision. The large glass bulb obviates the drip becoming obscured by an accumulation of solution—a constant source of trouble in other patterns of interceptors.

HAMILTON BAILEY, M.S. Lond., F.R.C.S.Eng.
Surgeon to the Royal Northern Hospital, London.

THE LANCET

LONDON: SATURDAY, JULY 3, 1937

ARE VIRUSES ALIVE?

When W. M. STANLEY announced two years ago that he had isolated from Turkish tobacco plants infected with mosaic disease a crystalline protein having the characters of the virus, the majority of virus workers received the news with a certain scepticism. Their doubt did not concern the facts but their interpretation, for it seemed possible that the virulence of this crystalline preparation was due not to the protein but to mosaic virus present as an impurity. STANLEY himself, who all along has shown commendable caution in interpreting his findings, clearly envisaged this possibility. Since then events have moved rapidly. His observations have been repeated and confirmed in this country, BAWDEN and his collaborators [1] at Cambridge having isolated an identical protein from diseased Burley tobacco plants. STANLEY [2] has further obtained the same high-molecular-weight protein from spinach and phlox plants infected with tobacco mosaic virus and BEALE [3] has had similar success with petunia plants. In every case the crystalline protein was highly virulent.

The fact that the same peculiar crystallisable protein has been obtained from such divergent species of plants as phlox and tobacco and that a solution of this protein has always proved virulent in high dilution, is strong evidence in favour of STANLEY'S view that this protein is the virus. But there is more. Tobacco mosaic virus has a number of variants each of which produces symptoms differing from those that characterise infection with the parent strain; and from Turkish tobacco plants infected with three of these variants—the yellow, the masked or symptomless, and the single-lesion mosaics—STANLEY [4] and LORING [5] have obtained heavy proteins which, though obviously related to STANLEY'S original preparation, have characteristics, both physical and chemical, that distinguish them from it and from one another. Thus when mosaic virus mutates the change is associated with a change in the protein which the variant produces in the plant that it infects. And when one adds that STANLEY has been unable to separate the heavy protein from a hypothetical virus impurity and that he has also shown that change produced in the protein is associated with a corresponding change in virus activity, it is not easy to object to his conclusion that this high-molecular protein is the virus. A further advance comes from the work of BERNAL and FANKUCHEN [6] who have been investigating at Cambridge the structure of these crystalline proteins by means of X ray photography and optical methods. They confirm their previous opinion that STANLEY'S crystals are of a liquid crystal nature; they find that though the crystals of different mosaic viruses show the same intramolecular pattern there are significant differences in intermolecular pattern and they suggest the possibility of classifying these viruses on the basis of X ray pattern.

It is difficult, then, to escape the conclusion that these heavy proteins are the virus. But since they can be obtained in a crystalline form without loss of activity they appear to belong to the non-living world. How are we to reconcile this with the ability of viruses to multiply and to cause contagious diseases that spread like diseases due to living micro-organisms, and their ability to give rise to variants? But can there really be any sharp dividing line between the living and the non-living? As one passes downwards in the scale of living things a point must be reached at which it is extremely hard to say whether one is dealing with the animate or inanimate, and it is possible that in the no-man's land between the two worlds agents will be found, like these viruses, which partake of the characters of both. As STANLEY says, the enormous size of the molecules of these virus proteins may allow of sufficient complexity of structure for them to behave in some respects like living organised beings. How many viruses will prove eventually to be of the same nature as these plant viruses it is impossible to predict, but already evidence is adduced that one at least of the animal viruses—that of the Shope rabbit papilloma—is a heavy protein. It seems fairly safe to assume, on the other hand, that the large animal viruses, like the virus of psittacosis and the viruses of the pock diseases, are more highly organised agents belonging more definitely to the living world.

DENTAL TREATMENT IN LONDON

A HANDBOOK [7] recently issued by the London Council of Social Service, describing the facilities for dental treatment in the L.C.C. area, is a useful contribution to an important aspect of public health. The information was collected by the students of the social science department of Bedford College working under the direction of Mr. HENRY MESS and has been collated and checked by Miss ANNE TOPLEY. The survey suggests that though the network exists for a scheme of dental treatment from early childhood to adult life, it is still too fragmentary and incomplete to have its full value as a means of combating dental disease. Thus there is provision for dental treatment for

[1] Bawden, F. C., Pirie, N. W., Bernal, J. D., and Fankuchen, I., *Nature*, 1936, **138**, 1051.
[2] Stanley, W. M., *Amer. J. Bot.* 1937, **24**, 59.
[3] Beale, H. P. (cited by Stanley) *Ibid*, 1937, **24**, 59.
[4] Stanley, W. M., *J. biol. Chem.* 1937, **117**, 325.
[5] Loring, H. S., and Stanley, W. M., *Ibid*, p. 755.
[6] Bernal, J. D., and Fankuchen, I., *Nature*, May 29th, 1937, p. 923.
[7] Provision for the Dental Needs of the Working Classes in the London County Council Area. Obtainable from the London Council of Social Service, 7, Bayley-street, W.C.1. 1937. Pp. 22. 4d.

children of pre-school age in most boroughs, but little use is made of the clinics by children older than 18 months. There is no legal obligation on the boroughs to provide such clinics, and the organisation and extent of the service varies considerably. In 8 boroughs there are still no maternity or child welfare clinics.

While then there is welcome evidence of increasing recognition of the importance of dental treatment for the pre-school child, it is clear that so far as London is concerned—and the same holds good for the rest of the country—facilities are still inadequate. The figures provided by school dentists are instructive. The percentage of children who require dental treatment on entering the elementary schools is well over 20, and the school dentist, who is already responsible for the dental condition of a much larger number of children than can be cared for properly, starts his work with a handicap of existing dental disease so great that he can hardly hope to catch up and in fact never does. The estimate in this report is that in London only 48·5 per cent. of the children requiring dental treatment receive it. The child attending the secondary school is apparently less fortunate as regards opportunities for dental treatment than the elementary school-child, since though certain facilities are provided in secondary schools they are much less complete. It is a reflection on our social order not without irony that a child intelligent enough to pass from an elementary school to a secondary school, and thus take the first step of a path which may lead to the university, should by so doing diminish his chances of receiving regular dental supervision and treatment. Should he be fortunate enough to be properly cared for in this respect till he leaves school, he will find yet another gap in the chain of dental treatment, for no worker is eligible for dental benefit under the N.H.I. scheme until he reaches the age of 19. Thereafter, since dental benefit is additional and not statutory, his opportunities vary according to the particular approved society of which he is a member, or to the facilities for treatment provided by public authorities or voluntary organisations in his district. Most of the voluntary hospitals have a dental department, though in some of them little more is done than extraction of teeth; at the other end of the scale are the hospitals to which dental schools are attached and these offer a complete range of service. Thus by hook or by crook the insured person gets the dental care to which he should be entitled. The almoners of all our hospitals are familiar with ways in which help can be provided for the necessitous poor; a convenient list of some typical voluntary agencies is here supplied, divided into (*a*) insurance societies and contributory schemes, and (*b*) societies to which appeal can be made on behalf of suitable applicants. The report, which is well arranged and edited, leaves no room for doubt that though dental inspection with treatment is a universal need, large sections of the working-class population have no effective help in obtaining it.

TULARÆMIA

MOST of us tacitly approve of the slightly censorious attitude of the medical writer of the Acts of the Apostles towards those who "spend their time in nothing else but either to tell or to hear some new thing." But preventive medicine forces its practitioners to copy these frivolous Athenians, since new diseases are rarely discovered until they are looked for, so that "telling and hearing some new thing" becomes an essential part of it.

Not that tularæmia is a "new thing." It is now 26 years since *Bacterium* (or *Pasteurella*) *tularense* was isolated by McCOY and CHAPIN, and 17 years since tularæmia was fully studied by EDWARD FRANCIS; it is nearly as long since the noxa was banished from our national collection of type-cultures because it was the only one which could not safely be handled by the curator. But what is new is the identification of tularæmia in countries in which it was previously unknown, making the chances of its arrival in these islands increasingly substantial. Just as in North America it has spread from the western and southern States to all except a few on the north-eastern sea-board—an epidemic from the sale of infected rabbits occurred in New York City last winter—so in the Old World it has been identified in Japan (1924), Russia (1928), Norway (1929), Sweden (1931), and now in Austria,[1] Turkey,[2] and Czechoslovakia, and there have been accounts of its occurrence also in Italy, Hungary, and Rumania. An important and well-documented account of the epidemic in Czechoslovakia[3] dealt with some 400 cases, of which nine-tenths were attributable to direct contact with infected hares. Now, for the first time—if we exclude the infections of laboratory workers at the Lister Institute already hinted at—a suggestion has been made that tularæmia may have appeared in the British Isles. Dr. A. P. THOMSON and his colleagues, in a paper published on page 9, describe three associated cases of a low, wasting fever, in one of which the histological appearances of the liver lesions resembled those of tularæmia. Fortunately it seems very unlikely, on the whole, that these were really cases of tularæmia, since the diagnosis rests primarily on a specific agglutination reaction which is strong and persistent, and this was negative in all three patients. Other important diagnostic features were also absent, such as a primary ulcer, conjunctivitis, enlargement of the glands, a short incubation period (1–10 days, average 3), and a very long convalescence; nor was there a history of contact with diseased rabbits or other rodents, although there was said to have been unusual mortality among the cats in the district in south-western Ireland, where infection was presumed to have taken place. Moreover, the most striking characteristic common to the three illnesses—viz., eosinophilia—is not found in tularæmia. Yet it is hard to make

[1] David, H., *Wien. klin. Wschr.* April 5th, 1937, p. 459.
[2] Arar, A., Communication to the Committee of the Office international d'Hygiène publique, May, 1937.
[3] Prochazka, L., Communication to the Committee of the Office, May, 1937.

an alternative diagnosis and the cases form an interesting little series about which to speculate.

Meanwhile the possibility of tularæmia reaching the British Isles remains. Of the various proved animal vectors, hares, rabbits, and water-voles are the commonest in this country, although many other animals and birds have proved susceptible to experimental infection. Since thorough cooking or freezing apparently renders the flesh of infected rabbits innocuous,[4] and since tame or hutch rabbits are rarely if ever infected [4] it seems unlikely, though not impossible, that rabbits imported from abroad for food or breeding purposes would introduce the infection. However, a glandular fever that cannot be diagnosed with certainty, especially if it is associated with an ulcer or a conjunctivitis or occurs in somebody whose occupation brings him into contact with ground game—e.g., gamekeepers, butchers, railway employees, and cooks—should arouse suspicion. An unusual mortality among rodents such as hares, rabbits, squirrels, or voles is also worth noting. The agglutination test is at present the decisive diagnostic procedure, but, as with other rare or new diseases, what is most important in practice is to keep the possibility of tularæmia in mind.

UPSHOT OF THE MACLEAN LITIGATION

CERTAIN aspects of the issues in the case of Macleans Ltd. *v.* Lightbown were summarised in Medicine and the Law [5] under the heading "Maclean's Stomach Powder." The issues were not of direct interest to the medical profession. Macleans Ltd., having acquired a right to the trademark "Macs" under which the company sold throat lozenges, successfully applied to the courts for an injunction to prevent Lightbown Ltd. from selling medicated sweets under the name "Merrimacs." The defendant company had advertised its sweets as "the famous Maclean sweets" and as "containing the genuine Dr. MacLean's stomach powder." Mr. Justice FARWELL thought that Lightbown Ltd. had been deliberately trying to steal the plaintiff company's reputation for its sweets. The interest of medical practitioners in the sale of these medicated sweetmeats is negligible. What doctors are, however, likely to be curious about is the side-issue of the stomach powder. Some of them probably wonder how far a commercial firm is protected by law when it exploits a prescription which a medical practitioner has offered gratis to the world. The word "exploit" is used in no offensive sense. Professional tradition prevents the doctor from making a commercial profit from any discovery which he believes to be of benefit to mankind. But commercial enterprise is needed to make the discovery available to the public, and commercial undertakings are naturally conducted on profit-making rather than exclusively altruistic lines. "Dr. MacLean," said Mr. Justice Farwell, "as all doctors generously do, gave the benefit of his researches and inquiries in respect of this medicine to the public; it was published in various medical and other journals and the right to use his prescriptions was not confined to any one person, either the plaintiff company (Macleans Ltd.) or any other person." The term "MacLean's powder," "MacLean's alkaline powder," or "MacLean's stomach powder" became well known among doctors and chemists; it was prescribed as such and customers might ask for it as such in drug stores. Various chemists made up the powder from Dr. MacLean's prescription for convenient retailing as required. This being the position before 1931, Macleans Ltd. began in that year to market a stomach powder made from one of the three formulæ published by Dr. MacLean. They advertised it largely so that it became even more widely known to the public. "That, of course," observed Farwell J., "did not prevent Professor MacLean's powder being still known as 'MacLean's powder' and rightly described as 'MacLean's powder':

> "The plaintiff company cannot claim any monopoly in the powder which they themselves make up from one of Dr. MacLean's formulæ, and they are not of course entitled to claim that the powder which they put on the market is from their own prescription or their own secret in any sense: but in my judgment, although other persons are entitled to describe their powders as made from one of the three formulæ of the Professor as 'MacLean's powder,' the plaintiffs (Macleans Ltd.) are entitled to have it made clear that the powder which is being offered to the public under the name 'MacLean's powder' or 'Prof. MacLean's powder' is the powder which is made up from a prescription of Professor MacLean and is not powder which is made up by the plaintiff company."

On this part of the case, then, the result of the judgment is that any chemist or manufacturer can make up and advertise for sale a powder described to be made according to Prof. MacLean's prescription. But, inasmuch as Macleans Ltd. have built up a business in, and have spent money in advertising, goods of this kind under their own name which happens to be almost indistinguishable from that of Prof. MacLean, no competitors will be allowed to sell goods as containing Prof. MacLean's stomach powder unless they also take pains to distinguish their goods from the goods of Macleans Ltd. An honest trader, in Mr. Justice Farwell's words, is entitled to call his powder Dr. MacLean's powder; but, if he is an honest trader, he must use those words in such a way that no reasonable person could suppose that he intends to tell the public that the goods he offers for sale are goods emanating from the works of Macleans Ltd. As was explained in the former summary of this litigation, the judge refused to grant an injunction to restrain the use of the words "containing the genuine Dr. MacLean's stomach powder." "I can see," he said, "no difficulty in the defendant company advertising and putting on the market for sale these sweets under another name, having on the packet a statement that they do contain the genuine Dr. MacLean's stomach powder, but used in such a way as to make it perfectly plain from what firm the goods come and thus to indicate that they

[4] *Publ. Hlth Rep., Wash.* 1927, **42**, 2951.
[5] *Lancet*, June 12th, p. 1423.

are not the plaintiff's goods." If that were done, there would be no occasion to restrain them from using the words.

The upshot of the case, therefore, is that Macleans Ltd. obtain no monopoly in the MacLean stomach powder: they did not claim it. What they claimed was that, if other persons wanted to use the name MACLEAN (when printed in capitals the distinction between the big and little "l" disappears) in order to indicate that the powders sold by them were manufactured from the formulæ of Dr. Hugh MacLean, such persons should make it perfectly clear that the name MACLEAN was used not for the purpose of indicating that the powder originated from Macleans Ltd. but for the purpose of indicating that it was in accordance with one of Dr. MacLean's formulæ. This claim the plaintiff company seems to have established. The fact that the surname of the founder of the company was almost indistinguishable from that of Dr. MacLean is a fact which may or may not have been commercially profitable but at any rate it involves no illegality. Dr. MacLean himself, who must be thoroughly tired of having his name dragged into litigation of this sort, is not legally entitled to prevent a firm of manufacturing chemists using a similar name which happens to be the name of the founder of the firm. But when in accordance with professional ethics a registered medical practitioner refrains from profiteering in the fruits of his researches, he deserves the sympathy of his colleagues if a confusion of similar surnames should leave any chance of his being thought by the uninstructed to be doing just what he certainly has not done. And this perhaps is the last of the litigation on this subject unless some new member of the clan Maclean, MacLean, or M'Lean arises to compete in the field of chemical manufacture.

ANNOTATIONS

CHILDREN AT PENDLEBURY

MANCHESTER showed its sunny side for the visit of the children's section of the Royal Society of Medicine on June 20th and the tour of the children's hospital at Pendlebury was a bright affair. This hospital, according to its annual report (1936), is the oldest voluntary hospital for children in the country, but he was a wise person who designed that it should be placed in an open area in the northern outskirts of the city. Florence Nightingale in May, 1879, said "The glimpses that I have had of the plans of your hospital lead me to think that it must be one of the best constructed in Europe." To-day the old hospital is still in an airy and well-lit place, and its 190 beds are amply spaced. At Pendlebury one can see the old and the new. On the south side Zachary Merton house is now in use for children in the convalescent period. This house is an excellent single story building to accommodate 40 children. The idea of supervising convalescents in the same grounds as the main hospital is helpful and it must be good for the children who are sufficiently recovered to have more freedom than would be possible in the ordinary wards. Those who contemplate a similar extension of their hospital should pay a visit to this home. Its position and construction are admirable and its colour scheme—an important medical domestic point—is attractive. The shaded greens on the walls tone with the open lawns and neighbouring trees, and with the children's green frocks. Dr. Lapage and his colleagues may well be satisfied with their new unit. It is now recognised that all general hospitals for children require an isolation block and Pendlebury will shortly have such a unit of 12 beds. This consists of a series of single rooms separated by plate glass partitions, enabling direct observation of all the children from the sister's room. The construction of this block is similar to one at the Birmingham children's hospital which ensures the continuation of general medical and surgical treatment of children who develop infectious disease in hospital. The visit of the section extended to the Duchess of York's Hospital for Babies. Dr. Chisholm related the story of its evolution as a children's hospital wherein women graduates could obtain resident appointments; and in fact it is only of recent date that a man has joined the staff. The hospital has 90 beds and is the scene of much interesting work in relation to the care and treatment of premature babies. Dr. Chisholm has elaborated a scheme for nursing mothers, and those who would know something of the practical management, values, and difficulties of such a scheme should consult her. At each hospital there was a display of clinical cases for the benefit of the visitors.

THERAPEUTIC HYPOTHYROIDISM

ENTHUSIASM for total thyroidectomy in the treatment of intractable heart disease is waning in America, where the method originated. The operation is being performed less frequently, and papers about it are more critical. Two that have appeared this year summarise the results in several hundred cases operated on since 1933, and observed over periods long enough to show the late results. Parsons and Purks [1] analyse particulars of 362 cases obtained not only from published reports but also through a questionnaire addressed to a large number of surgeons and clinics. In the cases of congestive failure, numbering 229, they find an operative mortality of 10·5 per cent.; among the survivors the result was considered excellent or moderately good in 63 per cent., but there was only slight improvement in 3 per cent. and none in 34 per cent. In the group with angina, totalling 133, the operative mortality was only 3·7 per cent., and the results were classed as excellent or moderately good in 84 per cent. In another paper Claiborne and Hurxthal [2] discuss the results in 27 cases treated in the Lahey clinic, and these are seen to correspond fairly closely with those collected by Parsons and Purks, except that Claiborne and Hurxthal found improvement in a smaller proportion of those with congestive failure. They believe that in the latter the improvement is often merely subjective and that the care with which patients follow advice after having undergone the discomforts and expense of an operation also contributes to success.

The figures contained in these reports suggest at first sight that thyroidectomy is well worth doing, but this conclusion has to be accepted with reserve.

[1] Parsons, W. H., and Purks, W. K., *Ann. Surg.* May, 1937, p. 722.
[2] Claiborne, T. S., and Hurxthal, L. M., *New Engl. J. Med.* March 11th, 1937, p. 411.

In the first place, though the operation seemed to be fairly well borne by patients with angina, this cannot be said of patients with congestion, who showed an immediate mortality of over 10 per cent. Secondly, it must be remembered that the figures given cover a limited period, and that a result properly considered excellent for a few months will often have to be reclassified as fair or poor at a later date. The net advantage becomes doubtful if after a short period of relief the symptoms return with their former intensity and the patient lives only another year or two. Finally, to get the maximum benefit from the procedure and at the same time avoid the more annoying symptoms of myxœdema, the metabolism should be kept at about minus 25 per cent., an adjustment that requires close observation and is not always practicable. At present the position seems to be that very few patients are really suitable for this form of treatment—far fewer than was at first believed—and that the majority are subjects with angina. In these, and in an even smaller number with congestion, the severity of the symptoms may justify a serious operation which is only palliative.

MEDICAL PRACTICE IN THE UNITED STATES

THE Russell Sage Foundation is issuing a series of books describing "the present status of certain established or emerging professions in the United States." The latest volume [1] deals with (1) medical education; (2) the organisation of the American medical profession, and the number, distribution, and economic position of American doctors; and (3) the recent development of industrial medicine, group practice, and various forms of voluntary health insurance. Though limited to American experience the book will interest medical practitioners in other countries. The earlier chapters establish that even towards the end of the nineteenth century the American standards of medical education and of qualification for medical practice were incredibly low. When Charles Eliot, after his appointment as president of Harvard in 1869, suggested certain changes in the medical curriculum it was thought that he would wreck the medical school. "He actually proposed," said the head of the school, "to have written examinations for the M.D. degree. I had to tell him that he knew nothing of the quality of Harvard medical students. More than half of them can barely write. Of course they can't pass written examinations." From this medical anarchy the United States was rescued mainly by the American Medical Association, which after its reorganisation in 1901 became a national influence, and later it had effective allies in the Association of American Medical Colleges and the American College of Surgeons. In describing the present conditions of medical practice in the United States, emphasis is laid on the high proportion of practice expenses to gross income, the rapid growth of specialised practice, the disparity between the incomes of specialists and general practitioners, the difficulties and relative poverty of rural doctors, and the increasing concentration of all forms of practice in the larger towns. The question is, how can medical care be made more generally available. The economic depression has intensified the public demand for social security, which now finds expression in various forms of voluntary health insurance, and in a growing movement towards compulsory health insurance. The latest development is, however, a movement that regards compulsory health insurance as merely a form of State endowment of private practice, and urges that the State should provide medical care as it now provides elementary education. This movement has adherents in the medical profession; and it may be that the American Medical Association, in resisting compulsory health insurance, has tended to deprive the profession of what in Europe has proved a bulwark against the real socialisation of medicine.

[1] Physicians and Medical Care. By Esther Lucile Brown, Department of Statistics, Russell Sage Foundation. New York: The Russell Sage Foundation. 1937. Pp. 202. $0.75.

DISTRICT NURSING

FIFTY years ago Queen Victoria founded the institute of district nursing which bears her name with £70,000 of the jubilee gift of the women of England to her. Queen Alexandra succeeded Queen Victoria as patron, and on her death a further £233,000 was subscribed to the institute in her memory. Queen Mary, the present patron, received 2300 Queen's nurses at Buckingham Palace on June 16th to celebrate the jubilee of the founding of the institute. District nursing, which means nursing the sick in their own homes, is as important to the community as are hospitals, but it is not nearly so well known—it has in fact been called "the silent service." The Queen's Institute of District Nursing trains nurses who have finished their hospital training for the special work of district nursing, and by inspectors covering the whole of Great Britain and Ireland sees that the work is kept up to a high standard. It works through the various district nursing associations in towns and counties. At present there are over 7000 district nurses; in one year they paid fifteen million visits and attended 70,000 women in childbirth. The institute is commemorating its jubilee by making the work of the Queen's nurses more widely known and thus inducing people to subscribe to their local associations; it is also raising money to enable it to train more district nurses. The medical profession will certainly use its influence in so worthy a cause.

LEUKÆMIC TUMOURS

THE apparent relationship of the leukæmias to neoplastic processes is emphasised by those occasional cases that present leukæmic infiltration of the tissues without any gross blood changes. In one such case, described by Dr. Haram in our columns on May 29th,[1] a woman of 39 had a sarcoma-like tumour removed from her left breast and six months later another similar one removed from her right breast. At the time of the first operation her blood showed no gross abnormality but after the second her leucocyte count showed 99·5 per cent. of lymphocytes, marking the case as one of lymphatic leukæmia. Post mortem extremely little lymphoid tissue could be found in the body, so that the pathological process, until near the end, must have been almost wholly confined to the tumour-like formations in the breast. It is of course well known that in leukæmia, especially of the acute lymphatic type, there may be a comparatively low leucocyte count, but these cases of so-called aleukæmic leukæmia or pseudo-leukæmia which develop local destructive tumour-like lesions are perhaps less commonly recognised, since they are liable to be mistaken for true neoplasms and treated surgically. Fleischhacker and Seyfried,[2] recording a series of 6 such cases, draw special attention to the frequency of primary affection of the throat and

[1] Haram, Joan, *Lancet*, 1937, **1**, 1277.
[2] Fleishhacker, H., and Seyfried, H., *Wien. Arch. inn. Med.* 1937, **30**, 177.

neck glands. This may make it difficult to distinguish the condition from lymphosarcoma or even lymphogranuloma. Of their cases two showed primary infiltrations about the neck or throat, one in the axilla, and one in the female breast. In several of them a leukæmic condition of the blood was not established till some time after the primary lesion had been recognised. In investigating these cases Fleishhacker and Seyfried derived much assistance from lymph-gland puncture, and they strongly advocate this measure where hæmatological examination or sternal puncture shows nothing positive. As they remark, the early recognition of these cases is not only of scientific interest but is also important to the patient since it may increase his chance of beneficial treatment and lessen the risk of inappropriate surgery.

HOSPITAL ARCHITECTURE

THE increasing interest taken in hospital construction is reflected in the *Architects' Journal* for June 24th, which is almost wholly given to the subject. In recognition of the predominant importance of function, an article by Dr. A. G. Ogilvie of Newcastle is included on hospital policy and development in the future, while the architect's point of view is expressed by Mr. D. R. Harper. Most of the number, however, is occupied by annotated photographs and plans of typical hospitals, general and special, constructed during the past five years, both in this country and abroad. It is, therefore, a work of reference to the latest ideas in hospital planning. Dr. Ogilvie deals generally with the types and sizes of hospitals that a modern community requires, and the inevitable interlocking of interests between voluntary and municipal hospitals and between adjoining districts. He hints at the need for a fresh attitude towards ward construction—a question lately touched upon in our columns [1] and dealt with in somewhat greater detail by Mr. Harper. The latter voices the feeling common among architects that developments in these and other respects are hampered by the unexperimental attitude of hospital managers and of the medical and nursing professions. He is not without hope however; for he says that "the influence of foreign practice and the general reorganization of the health services in this country will be the main elements in the new hospital architecture. In the meanwhile many schemes will follow the established English tradition; for hospital committees are conservative and for the most part base their requirements on past experience. The lead will come from those who are prepared to take risks and gradually a change of outlook can be expected."

The numerous plans and illustrations contained in this journal should be very useful to the administrators and medical boards of hospitals. The general lay-out of a hospital is partly governed by considerations other than medical or administrative, such as the scope, contours, and aspect of the site, and each plan must be read with this fact in mind. The new Westminster Hospital and the extensions of St. Bartholomew's and of the Hospital for Sick Children, Great Ormond-street, illustrate what may be done in the heart of London. The Birmingham Hospital Centre is unhampered by restrictions of space. From the standpoint of internal arrangement the Royal Masonic Hospital is one of the most instructive, since it represents a complete and welcome departure from the large ward. Limitation of size of ward and an experimental attitude to bed-arrangement is also a feature of the Westminster, where the main wards are of 9–11 beds, and in some of them lengthways alignment, with screens, has been adopted. Of special hospitals Harefield, Middlesex, and Sully, Glamorgan (for tuberculosis), are fresh and attractive in design, while Paisley Infectious Diseases Hospital and a new style in isolation blocks at Tolworth Infectious Diseases Hospital merit examination. Of foreign hospitals, Paimio Sanatorium, Finland, presents a number of innovations, notably detached "lying halls" in veranda style for advanced cases; and Miller Hospital, Duluth, U.S.A., is an excellent example of compact planning for a small but extensible institution. Not least useful are a series of alternative model plans of ward, out-patient, operating, and kitchen units.

The vexed question of vertical versus horizontal lay-out is discussed both by Mr. Harper and editorially, but is not finally answered. The cost of high buildings requires more study. The conclusion of the Departmental Committee on the Cost of Hospitals that economy in construction ceases at four stories is not quite in accord with some American experience, but the life of sky-scrapers is problematical. In populous places sound-proofing is a problem, and the *Architects' Journal* points out that it is only soluble at present if air-conditioning and very heavy expense are no objections. Mr. Harper thinks it unlikely that English hospitals will ever have—or need to have—the elaborate air-conditioning plant provided in many American hospitals, but the process has now become so efficient that its use, along with sound-proofing, may have to be considered if new hospitals are to be built in towns or on busy highways.

"ARTERIAL CONTACT" IN MÉNIÈRE'S SYNDROME

ALTHOUGH three-quarters of a century has elapsed since Ménière drew attention to the symptom-complex of vertigo, tinnitus, and deafness, we are still ignorant of the precise mechanism of it. The various methods of treatment include two surgical operations—destruction of the membranous labyrinth by alcohol, and division of the acoustic nerve—and Dandy, who has divided the nerve in 160 patients, now reports [1] abnormalities in the cerebellopontine angle that may sometimes be responsible for the disorder. Most of these abnormalities are anatomical irregularities of the arteries. Thus in one case an aneurysm of the vertebral artery was found in intimate relationship with the acoustic nerve, and in other cases apparently healthy arteries pursued an abnormal course in contact with the nerve. Operation on one patient disclosed "an arterial loop totally encircling and tightly strangling the eighth nerve as if in a noose." In 10 per cent. of the cases an abnormal "arterial contact" was considered to be the unequivocal cause for the attacks, and if others are included in which the abnormal vessel appeared insignificant, the figure is increased to over 30 per cent. Discussing the various hypotheses from time to time put forward to explain Ménière's syndrome, Dandy gives it as his own opinion that the cause is always a lesion of the acoustic nerve or of its vestibular division. In two patients an angle tumour gave rise to typical attacks, and Dandy suggests that (contrary to the general belief) such tumours may not infrequently set up paroxysmal vertigo.

These observations are a valuable contribution to knowledge, but Dandy himself admits that the

[1] *Lancet*, 1937, **1**, 225.

[1] Dandy, W. E., *J. Amer. med. Ass.*, 1937, **108**, 931.

abnormalities noted can account for only a fraction of all cases of Ménière's syndrome. Moreover it is difficult to understand how a congenital abnormality can of itself suddenly produce symptoms in a person previously healthy, and how a static condition can cause paroxysms separated by intervals of normal health. To explain these features one might assume some periodic alteration in the shape or calibre of the artery that is in contact with the nerve. A similar mechanism is held by some neurologists to be a likely explanation for ophthalmoplegic migraine. But whether stimulation of the eighth nerve can take place in this manner is doubtful, for tests usually indicate that both cochlear and vestibular sensibility are diminished. The direction of the nystagmus and of the sensation of rotation which occur in an attack does not provide consistent information as to whether the suspected nerve is the origin of abnormal stimuli or whether it is temporarily paralysed.

THE WAITING OUT-PATIENT

THE out-patient arrangements committee of King Edward's Hospital Fund for London has performed a useful public service by the issue of a memorandum on "Time-saving Methods in Connection with Arrival and Registration of Out-patients, with Notes on Other Early Items of Procedure."[1] In this pamphlet of 35 pages the committee, of which Dr. H. Morley Fletcher is chairman, sets out clearly some practical suggestions for shortening the interval between the time when patients arrive at the hospital and the time when they see the doctor. That this interval can be materially reduced by simple and inexpensive means has been proved by the experience of certain hospitals where special attention is given to this branch of administrative technique. Like any other kind of technique, it must be learnt, and this memorandum should do much to teach it.

Probably the most important of the committee's suggestions is that there should be centralised supervision of the whole out-patient department, preferably by the secretary or other chief executive officer of the hospital, who should be personally responsible, and report periodically to a standing out-patient committee and to the medical staff. The appointment of such a committee would, it is thought, have the advantage of ensuring that some members of the governing body would become familiar with the detailed working of the out-patient department. Essential importance is attached to an efficient system of record-keeping, which should not only be accurate but include all the information that is necessary and none that is not, and facilitate the rapid entry of particulars of new patients and the rapid finding of papers relating to old patients. A modern system should, it is said, provide that the original registration forms should easily be supplemented by the records of special departments; that the patients should have no opportunity of reading their case-sheets; that the original forms should give each department all the personal information needed, and so make it unnecessary to ask a patient the same questions more than once; and that each patient should have a serial number on all his papers. To promote discussion of this important subject, the committee has drawn up a model scheme of records, which is explained in the memorandum. The forms recommended are of three kinds: (1) an identification-card to be kept by the patient; (2) a case-sheet, a prescription-card, and a folder, all to be used during visits and returned to the registry; and (3) an index-card to be kept in the registry for reference. The importance of record-keeping is perhaps less appreciated by hospital administrators here than in the United States, where in some hospitals the problem of transporting case-sheets from the registry to the departments concerned has been solved by installing a pneumatic-tube system. To European visitors, however, American methods occasionally seem too elaborate, and they have led native humorists to suggest that diagnosis and treatment may be carried out by study of documents rather than by examination of patients.

The memorandum discusses various methods, apart from registration, for reducing the waiting-time in out-patient departments, especially by approximating the time of arrival of the first patient to that of the doctor, by shortening the preliminary processes, and by giving different times of arrival to certain classes of patients—e.g., male and female, adults and children, old patients and new patients, patients with doctors' letters and those without. The growth of hospital contributory schemes has increased the number of patients exempt from all almoner's inquiries other than those relating to after-care, and time is saved by sorting out these patients before they reach the almoner's room. It may be noted also that the bringing of doctors' letters has among its many advantages that of reducing the time spent by the patient before examination.

The memorandum, though primarily intended for hospital administrators, may profitably be studied by private practitioners, especially those with large practices in industrial areas. Prolonged suspense in a doctor's waiting-room is good neither for the patient nor the practice, and it can only be avoided by taking thought.

[1] Published for King Edward's Hospital Fund for London by Geo. Barber and Sons, Ltd., Furnival-street, London, E.C.4. Price 1½d., post free.

OPHTHALMIC BENEFIT: THE SORE POINT

AN open letter from the Minister of Health to Sir Francis Fremantle emphasises the fact that an insured person cannot obtain ophthalmic benefit until he has, as a first step, been examined by his own insurance doctor. Moreover, the new regulations provide that every person claiming ophthalmic benefit shall be informed of his right to go to a medical eye specialist, if he so desires, whether that is the normal arrangement made by his approved society or not. Sir Kingsley Wood emphasises these points as he feels that they have not been generally understood. He omits however to say, what the medical secretary of the British Medical Association knows to be a fact, that little or no encouragement is given to the insured person to seek the advice of a doctor about his eyes; unless the right is exercised at the time of application for ophthalmic benefit the insured person has to follow the instructions of his society, which generally means that he will be examined by a sight-testing optician. Sir Kingsley adds that the object of the list of opticians to be drawn up by the new committee is to enable approved societies to have a list of persons to whom members can go for the purpose of obtaining glasses. The list will, in fact, be described as "A list of opticians recognised by the committee for the purpose of the supply of optical appliances to insured persons." But the value of this description is marred by the alteration of the first draft of the regulations to include a reference to services rendered by an optician incidental to the provision of an optical appliance. This implies the recognition by the Minister of sight-testing by opticians, and an admission

of their claim to be diagnosticians, which will surely make it increasingly difficult for the Minister to educate the public in the way he wishes. His letter concludes with an emphasis on his belief that under the new regulations there should not be any set-back to the progress of useful schemes for a service of medical eye specialists working in coöperation with qualified opticians. Unfortunately the medical profession does not share that belief.

A MEMORIAL TO DR. CECILE BOOYSEN

EARLY in 1935 a small clinic was opened at a house in the overcrowded district near the Angel with the object of giving advice on contraception to the poor women in the district, and of treating minor gynæcological ailments in mothers who are unwilling or unable to attend at hospital. Dr. Cecile Booysen was the instigator of this piece of work, and through her efforts a committee was formed, money was raised, and suitable premises were found. The work of the clinic quickly became known to local practitioners, and there are now four sessions, one in the afternoon and three in the evenings. At two of these instruction is given on birth control; one is a psychological session for women who have dyspareunia or other difficulties of marital adjustment, and the fourth is a gynæcological session supported by three weekly treatments from the clinic nurse. It was one of Dr. Booysen's ambitions that centres of this sort should be made available for working-class women elsewhere. The clinic at Spencer-street is supported entirely by voluntary contributions, and Dr. Booysen's co-workers are raising a fund to endow the centre, the name of which will be changed to the Cecile Booysen Clinic. Contributions should be sent to the secretary of the Goswell Women's Welfare Centre at 39, Spencer-street, London, E.C.1.

THE HEADQUARTERS OF THE NURSING PROFESSION

THE convenient tradition that the nursing profession sets up an austere ideal for its members, scorning the amenities of life, can hardly survive inspection of the new home of the General Nursing Council for England and Wales. This building, No. 23, Portland-place, is nearly opposite the former premises of the council. It is not only admirably adapted to present and future needs—the general register, now including some 70,000 names, will have to be greatly expanded if the country is to receive an adequate nursing service—but is æsthetically satisfying both without and within. The council has changed its habitat three times since it was appointed in 1920 to administer the Nurses Registration Act, 1919. It moved from offices at the Ministry of Health to 12, York-gate, Regent's Park, in 1921, but owing to the rapid development of the work this house soon proved to be too small and in 1925 the council acquired the lease of No. 20, Portland-place, taking on an additional house next door in 1933. Shortly after the completion of this extension the British Broadcasting Corporation started negotiations for the purchase of both houses, which resulted in an agreement to give up the premises in exchange for the sites of Nos. 23 and 25, Portland-place on the other side of the road and a new building, which was opened on June 25th by the Princess Royal. Some of the special characteristics of this four-story edifice, of which the architects are Messrs. Newberry and Fowler, were noted in our columns last week. No description of cleverly restored paintings, massive mahogany doors, fireplaces, and other lovely features rescued from the demolished Adam houses on the present site or imported from the old building could give an adequate impression of the beauty of the new interior; this is largely due to the skill with which drapery, lighting, and colour have been combined in their setting. English nurses will have good reason to be proud of showing their official headquarters to colleagues from other countries who will assemble this month in London for an international congress.

THE DURHAM CENTENARY

ON June 1st, 1837, a statute, passed by the dean and chapter of Durham and approved by the bishop, received the royal assent and a week later the first degrees of the University of Durham were conferred. In the autumn of the same year Bishop Wm. van Mildert handed over Durham Castle and its precincts to become the centre of its academic life. This is the centenary which is being celebrated this week. The school of medicine and surgery at Newcastle-upon-Tyne celebrated its own hundredth anniversary nearly three years ago,[1] for it was on Oct. 1st, 1834, that the hall of the Barber Surgeons in the Manors was formally opened. This week's centenary has, however, also a significance for medicine in view of the new constitution which is now awaiting the approval of the King in council; for, under this new constitution, while the Durham division returns to something like its old organisation, in Newcastle the school of medicine and the Armstrong College will be united in a new King's College. The economic situation which led to a postponement of these centenary celebrations is now easier and the prospects of the University of Durham with its two divisions under federal control are bright at the opening of the second centennium.

THE New York correspondent of the *Times* announces that a fund of about $10,000,000 (£2,000,000) has been given to Yale University for the investigation of cancer. The donor is Mr. Starling W. Childs and the money will form the Jane Coffin Childs memorial fund for scientific research.

[1] *Lancet*, 1934, **2**, 821.

WORKERS' RISKS FROM ETHER.—The clinical use of ether has made common knowledge of several properties that the vapour possesses. Everybody knows that inhalation of it may induce nausea or vomiting, and often leaves a taste or a smell which clings about the mouth and breath for hours after the circulation is free. Other less familiar qualities have been brought to light through the industrial uses that are made of ether. Some of these are described in an article by Prof. W. Dominik of Warsaw in the *Industrial Safety Survey* for March-April (p. 34). They depend on the volatility and fat-dissolving powers of ether. Fat may be removed from the skin of the worker who is much in contact with ether. In consequence the epidermis becomes brittle, tears easily and is subject either to acute inflammation or to infection by bacterial penetration. Mental symptoms due to inhalation of ether vapour are not uncommon, but disappear as soon as the sufferer is withdrawn from the ether-laden atmosphere. Dominik believes that the causes of ether explosions are not yet elucidated, but the unexplained kind to which he is alluding are not met with during the employment of ether for anæsthetic purposes. These are apparently explosions due to decomposition of ether, for example, in drying ovens, when "the resulting radicals, by chain reactions, bring about a deflagration of the ether vapour or other organic substance present in the surrounding hot air."

GRAINS AND SCRUPLES

Under this heading appear week by week the unfettered thoughts of doctors in various occupations. Each contributor is responsible for the section for a month; his name can be seen later in the half-yearly index.

FROM A READER

I

THERE is nothing in science more thoroughly abused than the biological approach. I am led to that conclusion by considering what the tone of these comments would probably be. A commentator strings, more or less gracefully, a column of paragraphs on a thread of prejudice, and if there is any marked bias or professional twist of mind I would admit in my remarks it would be a biological one.

Having written the word "biological" I find it slightly distasteful, and feel that I would do well to delete it. But it is perhaps better to let it stand, and inquire why it should raise doubts of its propriety. On the face of it, to be thought biologically minded is fairly flattering. Biology, as a word, has an air. It suggests clean white laboratories, high thinking, and hygienic living. It has an ardent, Utopian, prescient ring about it, and it seems capable of surviving even the blasphemous intents with which the Chesterbelloc school endows it. Perhaps the very profusion of images it calls up makes it suspect; the term is too extensive. To lay claim to a biological mind may suggest to one a cold-blooded eugenist, and to another only the traditional figure of the bespectacled gentleman chasing butterflies. That degree of confusion is natural and harmless, for the man in the street rightly considers that if he had the time, for example, to build a formicarium and gather material on the community life of ants, he would be as much a biologist as any advanced laboratory worker. Animals are there for anyone to study, and White of Selborne is as good a model for the amateur as Henry Cavendish.

It is not the lack of precision that makes the term unpleasing. Biology suffers not from the vagueness of the man in the street but from the excesses of the man in the Bloomsbury attic, and it is there, I think, the distaste arises. Living things are anybody's province, and with the Facts of Life available in fortnightly parts, it is open to anyone to become a Biological Thinker. And no one who has suffered from the biological interpretations of the parlour sociologist will dismiss this view merely as the outcry of a jealous professional.

The trouble lies in the popular books on science. They are both desirable and necessary for anyone who wishes to understand what is going on in the world, but popularisations, like proverbs, are only half true. Too much space is wasted on the wonders of science, and the way that scientists fumble and think is neglected. The marvels of the universe appear to induce in the reader an intellectual arrogance where only intellectual curiosity is relevant; and an impatience for the millennium where the fact that a Utopia is even conceivable is the only comfort of the writer.

* * *

One of the most stultifying conceptions that popular biology has made current is the analogy between a metazoon and an animal community. After comparing the lone amœba with the happy sponge, in which cells have banded together for mutual convenience, how tempting it is to regard a community as an organism made up of so many cell-individuals. But *membra sumus corporis magni* is profoundly unhelpful when translated into a sociological sphere. What members? And what is the morphology and physiology of this body?

Of course it is only a useful abstraction designed to further progress, but what improvers bother to amend the abstraction? They go for the animals behind it.

Let us take a monetary abstraction, and divide a community about its average income into the high and low incomes. Then re-divide it about its political centre. Few would dare guarantee that the bulk of the poorer people were in the labour-socialist division. A British socialist might agree that the National Government has the support of many of the exploited classes, but would hope that with education these would see that their road to economic freedom lay to the Left. The political division would in fact neatly coincide with the economic only when the organism knew what was expected of it by its creator.

Marx is said to have made a profound and brilliant analysis of Darwin's theory when he pointed out it was an interpretation of nature in terms of a bourgeois society. But Darwin at least interpreted one community in terms of another, whereas Marx went one step further from reality, and invented an organism out of the economic behaviour of man. As a technical procedure, this was fully justified by its success, but it is difficult to separate man from his economic characteristics, and a religious belief in the validity of the organism implies that man must be made to fit it. The totalitarian state, however attractive in its simplicity of function, is the most depressing fruit of biological analogies of this kind.

Medico-biological analogies are even more attractive. A bus strike is a thrombosis, a slum district an ulcer, and the anthropomorphosed cancer a powerful metaphor in the mouth of the reformer. For what nation, menaced by the superior competitive powers of alien constituent cells, could resist the dictator-surgeon's conviction that it can be saved only by the ruthless extirpation of this malignant growth of community life.

* * *

We have in this country a tradition of amateur biologists, but when I consider how appalling mere speculation can be, I suspect that their success is due more to their literary charm and brilliance than to the closeness of their argument. Samuel Butler is the really great figure in this line. He had a heartening way of sweeping through his speculations with a high hand. He had, too, a niggling mind that went on elaborating points down to the smallest detail, pushing analogies as far as verbal juggling could decently take them. Happily he possessed a sense of humour; he could not resist tagging a *non sequitur* on to a shaky illustration, and the neatness of the wit deludes the unsuspecting into believing in the closeness of the argument. The quality of his humourless speculation is occasionally dreadful. When in the Note Books he writes "the reason why the offspring of protoplasm progresses and the offspring of nothing else does is that the viscid nature of protoplasm allows vibrations to last a very long time, and so very old vibrations get carried into any

fragment that is broken off . . ." there is nothing to do but turn over in haste and forget the portentous nonsense in the demure theology of "A Lawyer's Dream of Heaven. Every man reclaimed his own property at the resurrection, and each tried to recover it from his forefathers." Brilliant as Erewhon and Life and Habit are, it is the exuberance rather than the biology that convinces. But no one thinks the worse of them for that.

There must be few English-speaking scientists under forty who did not revel in the enormous exuberance of Wells's scientific romances. Wells had a biological training. Had he received none, what a welter of effective nonsense he might have loosed on a generation seeking for a sign. As it was, he gave it several very good ones. No matter what holes one picks in those books, they remain convincing, heady, and stimulating. For plausibility his romances stand alone. He does it not by any careful attention to detail but by the neatest tricks of reportage, that automatically close the door on criticism.

It is a commonplace to name him a successor of Jules Verne's. But Verne did little more than put his up-to-date scientific knowledge into adventure stories. He played with facts, not ideas, and if his ingenuity failed him, was capable of the crudest literary tricks. At the end of one novel, Hector Severac's little party, and the slice of the Mediterranean basin on which they had been carried into space by an earth-grazing comet, are nearing the earth again. The excitement rises as the world looms larger and larger . . . and Verne, by a staggering coincidence, pops the missing portion back exactly into its original place. Then, feeling that probably this was too much for the reader, airily drops the intensely matter-of-fact narration that has hitherto characterised the whole book, and leaves his hero dazedly wondering whether he imagined the whole adventure. Wells would never have let the party go into space unless he knew precisely how the return could be plausibly staged. He never gets out of key, and having invented a particular brand of reality he never loses it. The invading Martians *are* invincible, but they are also bacteria-free, and the world is saved because on earth they succumb to the feeblest infections. The Time Traveller can never be got at to verify Wells's extraordinary report of him, because he has never returned from his second journey. Mr. Fotheringay, in one of the most satisfying of Wells's fantasies, is neatly made to will everything back as it was before he voluntarily renounces the miraculous will-power that involved the whole world in a shattering catastrophe.

* * *

Literary play with biological ideas, from Butler down to dreary rehashes of current science like Brave New World, does biology no harm in the sense I have tried to indicate. The real danger in the biological approach is the imposition of an alien technique of thought on a problem that should dictate its own modes of solution. A jelly-fish is an organism, and nothing in the world can take away its organisation. A nation is an abstraction, and no manipulation of its origins can ever give it reality.

The abuse of the method isn't due only to a failure to appreciate its fallacies. Analogies with biological systems are attractive because, if they are sufficiently close, the conception acquires whatever prestige that biology may possess. But the technique and natural history of prestige-lifting is too complex to be dismissed in a remark or two, and I must pursue it along the thread of my prejudice next week.

SPECIAL ARTICLES

MEDICINE AND THE LAW

Doctor Signs Patient's Will

IN Pickerill *v.* Pickerill the medical attendant of the deceased testatrix had an unusual but entirely proper part to play in the making of her will. The patient had almost lost the use of her right hand. The terms of her will, framed according to her directions, were read out to her by her doctor at her request. As she was physically unable to sign it, he asked her to squeeze his hand if she approved the terms and if she wanted him to sign on her behalf. She did so; he signed, and two witnesses attested the signature. This procedure, presumably arranged on legal advice, was undoubtedly in order. The Wills Act of 1837 requires three formalities. First, the will itself must be in writing. Secondly, it must be signed at the foot or end thereof by the testator "or by some other person in his presence and by his direction." Thirdly, there must be attestation by two witnesses in the testator's presence. A mark or initials will suffice to represent signature whether the testator can write or not. An invalid's hand may be guided in making the mark or initials; but it is not a valid signature if a dry pen is passed over a signature already written. The dry pen adds nothing and makes no sign; hence it is useless as an authentication. A rubber stamp will do; two years ago the impression of an inked thumb was accepted as a sufficient signature; if a mark is made, any kind of mark will do; a cross is not essential.

The probate action in Pickerill *v.* Pickerill was full of difficulties. The will could not be found and the court had to be asked to accept a copy. The doctor was dead; but the attesting witnesses were able to explain what had happened. They proved that the squeeze of the hand was intended (as a nod of the head might have been) to be a direction to the doctor to sign on behalf of the patient, and the Wills Act was thus complied with.

Holiday Shacks and Demolition Orders

The Worthing Corporation has been defeated in an endeavour to apply the demolition provisions of the Housing Act to two houses at Worthing which the county court judge described as "shacks" or holiday homes. The Act enables local authorities to require the repair or demolition of "any house which is occupied, or is of a type suitable for occupation, by persons of the working classes." The Act has in mind the elimination of houses "unfit for human habitation." The judge, however, on the owner's appeal against a demolition order, came to the conclusion that, being "shacks" or holiday homes, the buildings could not properly be described as houses occupied by, or suitable for occupation by, the working classes.

This does not mean that the local authority is powerless to enforce decent standards. Another court might draw a different conclusion from different facts. There are special provisions, too, in our public health laws for dealing with tents, vans, sheds, or similar structures used for human habitation. These

can be treated as statutory nuisances if they are "in such a state, or so overcrowded, as to be prejudicial to the health of the inmates," or if their use, "by reason of the absence of proper sanitary accommodation or otherwise," gives rise, whether on the site or on other land, to a nuisance or to conditions prejudicial to health. And local authorities can make by-laws for promoting the cleanliness and habitable condition of tents, vans, sheds, and similar structures used for human habitation. Any court, before which proceedings are taken in respect of any such statutory nuisance, can prohibit the use of the structure for human habitation. Such is the language of the new Public Health Act which takes effect next October. Similar provisions already exist under various enactments which the new Act will then supersede.

IRELAND

(FROM OUR OWN CORRESPONDENT)

MEDICAL CANDIDATES FOR THE DÁIL

AMONG the candidates for election to the Dáil this week were twelve medical men. Of these five seek re-election, three, although not members of the last Dáil, had seats previously, one was formerly a Senator, and three have not been members of the Oireachtas as yet. Two of those who seek re-election are members of the present Government, Dr. James Ryan as Minister for Agriculture, and Dr. C. Ward as parliamentary secretary to the Minister for Local Government and Public Health. They are candidates for co. Wexford and co. Monaghan respectively. The others seeking re-election are Dr. J. J. O'Reilly who represents co. Cavan and Dr. T. F. O'Higgins who represents Leix-Offaly, and Dr. P. J. O'Dowd who has hitherto represented co. Roscommon as a member of the Government Party and now seeks election as an Independent. Dr. Myles Keogh, Dr. F. Humphries, and Dr. S. Tubridy, who were members in previous Parliaments, are candidates in South Dublin, Carlow-Kildare, and West Galway respectively. Dr. W. O'Sullivan, who was a member of the late Senate from its establishment until its abolition, is a candidate in the Opposition interest in South Kerry. The three candidates who have not previously been in the legislature are Dr. P. Doyle, who seeks election in Leix-Offaly, Dr. J. Hannigan in South Dublin, and Dr. M. Brennan in co. Sligo. At the time of its dissolution the last Dáil contained eight medical men. Of these three are not seeking re-election—Dr. R. E. Davitt, one of the representatives of Meath; Dr. J. B. Lynch, one of the representatives of South Dublin; and Dr. R. J. Rowlette, one of the representatives of the University of Dublin which is no longer entitled to parliamentary representation.

PARIS

(FROM OUR OWN CORRESPONDENT)

THE VENEREAL DISEASE CAMPAIGN IN FULL SWING

THE Ministry of Public Health has published in the *Journal Officiel* for May 2nd three circulars on venereal disease. The first deals with the personal medical passport to be kept by the subjects of venereal disease. The identity of the card's owner is indicated by a number, no reference being made to his name. The doctor in charge is supposed to enter on this passport all pertinent details concerning the diagnosis, clinical observations, operations and other treatment, the findings of laboratory tests, and instructions to be followed by the patient. Should he change his domicile and cease to attend the dispensary issuing his passport, it is to be given to him or to his new doctor. If the passport is mislaid, a facsimile can be prepared from the records kept at the dispensary the patient has attended. This precaution is designed to meet the case of the patient who mislays his passport with frank carelessness or the more or less veiled hope that in shedding it he somehow or other also sheds the obloquy and obligations it imposes on him.

The second circular concerns the organisation of venereal disease dispensaries, services, and laboratories. The third deals with the allotment of 19 areas to as many regional inspectors henceforth to be responsible for the satisfactory working of the venereal disease organisation in their own spheres. These regional inspectors have been chosen from among the greatest authorities in France on venereal disease, and many of them are university professors. The district of Nancy, for example, is put in charge of Prof. Spillmann, Nantes in that of Prof. Bureau, Paris in that of Prof. Gougerot, and Toulouse in that of Prof. Nanta. Yet another circular, dated April 16th, outlines the proposed machinery for the administrative coördination of measures against venereal disease. Local authorities are told how to work with the central authorities, and civilians how to work with the Army. In all garrison towns, the civil medical authorities must meet the Army medical authorities at least once a month so as to deal in union with their common problems as they arise.

CONTROL OF B C G INOCULATION BY TUBERCULIN TESTS

A communication made to the French Academy of Medicine on June 1st by Dr. H. Foley and Dr. L. Parrot of the Pasteur Institute in Algeria dealt with the still vexed question of the control of B C G inoculations by tuberculin skin tests. Since April, 1928, these investigators have studied the reactions to B C G and to tuberculin of children up to the age of 15 living in an isolated community in the Sahara where tuberculosis is comparatively rare. These children were given B C G by subcutaneous injection or by the mouth, each child being reinoculated from time to time. At least twice a year for several years they were tested with tuberculin by both the Pirquet and the Mantoux test whose results were controlled after 48 hours. As many as 39 of 156 children repeatedly inoculated with B C G were consistently Pirquet-negative, although the Pirquet test was repeated from 5 to 16 times. Among these 39 children were 31 who gave a positive reaction to the Mantoux test. While only 75 per cent. of these B C G children were tuberculin-positive to judge by the Pirquet test, as great a proportion as 94·8 per cent. were so according to the Mantoux test. This unreliability of the Pirquet test as a measure of the action of B C G was still more stressed when only those children were considered who had received a single dose of B C G given by the mouth. In a group of 23 such children there were only 2 giving a positive Pirquet reaction four months after the administration of B C G, whereas 20 out of 24 gave a positive reaction to Mantoux's test. Children up to the age of 15 and not inoculated with B C G were found in another isolated Sahara community to be invariably Pirquet-negative, whereas 12 of 59 such children gave a positive reaction to Mantoux's intracutaneous tuberculin test. The point Dr. Foley and Dr. Parrot are anxious to drive home is that B C G

inoculation may be discredited by the misleading evidence of Pirquet tests, and that B C G may be given to persons already harbouring tubercle bacilli, whose subsequent activities may bring it into disrepute.

VITAL STATISTICS

M. Marcel Moine, statistician to the Comité National de Défense contre la Tuberculose, recently presented to the Academy of Medicine a statistical study in which he compared the birth-rates and death-rates in France of the period 1846–55 with those of 1933. He calculated that between the two periods under review, the mortality has diminished from 240 to 160 per 10,000 inhabitants, and that this improvement has been greatest between the ages of 1–4 in which it has amounted to 85 per cent. After the age of 85, the mortality has, curiously enough, become higher in 1933 than it was in the period 1846–55. Had the French birth-rate remained at the generously high level of this period, France would by now be peopled by 89 millions. On the other hand, had the old death-rate been maintained, then France would now be down to a paltry 28 millions. M. Moine's graphs, even more immediately illuminating than his unadorned figures, showed how England and Wales, France, Germany, and Italy have behaved in the period under review in the matter of births and deaths.

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

THE DOCTOR AND THE STATE

As predicted in my last letter the proposals for federal coöperation in the provision of medical care adopted by the important New York State Medical Society were brought before the house of delegates of the American Medical Association assembled in Atlantic City for their annual meeting on June 7th. After two days the house of delegates accepted the principle expressed in the New York society's resolution that the health of the people is a direct concern of the Government and that a national public health policy directed toward all groups of the population should be formulated. They chose however to ignore such proposals for its formulation as had been put forward by New York and preferred to express an attitude of "passive receptivity," to borrow a happy phrase from the correspondent of the *New York Times*. A few hours after this decision was arrived at Senator Hamilton Lewis transmitted a personal message from President Roosevelt inviting the doctors to coöperate with him "in such methods as you would jointly find would be to the service of the helpless and the afflicted, within such province as you felt Government should undertake." Senator Lewis, in his capacity as chairman of the Senate's subcommittee on social legislation, went a good deal further and intimated that an amendment to the Social Security Act is to be submitted to the present session of congress to provide for adequate medical care to those who cannot afford to pay for it. Senator Lewis indicated that the Government has no thought of interfering with the relationship between the doctor and his patient but does regard the licensed doctor as being a responsible officer of the State charged with responsibility for the health of the "citizen."

The position is then, at the present, that the profession and the Administration have agreed to sit down at the same table in a friendly spirit but that the cards are still all face downwards. A sentence in the report of the board of trustees of the A.M.A.—"the available evidence indicates that to-day throughout the United States the indigent are being given a high quality of medical care and service"—indicates that play may have to proceed while some leaders of the profession continue to keep their eyes tightly shut.

AT THE ANNUAL MEETING

Belated recognition by the house of delegates that the giving of contraceptive advice is a proper function of the physician has caused some protest from a Roman Catholic priest and from the Federation of Catholic Physicians' Guilds but is generally accepted by the press as a sign of grace.

Among the more interesting papers presented at the scientific sections is one by Dr. Allan L. Barach attributing a number of recent airplane accidents to "oxygen-want" in the pilots. He pointed out that before the accident in which Senator Cutting was killed the pilot had been flying continuously for nine hours at altitudes between 10,000 and 12,000 feet. The effect of oxygen-want upon the brain he considers to be more serious than its effect upon the heart, though patients with symptoms of heart disease should be warned against transcontinental flying until provision is made for adequate oxygen inhalation. An atmosphere corresponding to 15,000 feet altitude impairs reason, judgment, control, and memory in the space of two hours.

The present enthusiasm in the campaign against venereal disease found expression on the last day of the conference when three Baltimore physicians reported highly successful results in the treatment of gonorrhœa with *p*-aminobenzenesulphonamide [1] and Dr. Vonderlehr of the public health service urged that gonorrhœa should not be overlooked in the present campaign against syphilis. Dr. Walter Clarke, an American graduate of Edinburgh University, described the programme that he has organised in New York City for the campaign against syphilis. The health department laboratory makes blood tests for physicians on request, and with the aid of Social Security funds, the department now furnishes drugs free for treatment of indigent patients or those unable to pay full fees. A nursing service is also available on request. The department furnishes to clinics and to practitioners instructive pamphlets for patients. A system of reporting cases has been instituted by which practitioners report cases of venereal disease. For this purpose a form and an envelope with postage paid are provided by the health department.

BUDAPEST

(FROM OUR OWN CORRESPONDENT)

NOISE

At a congress held by the Budapest League against Noise at the beginning of May it was agreed that excessive noise is harmful to health, and ways and means of preventing it were discussed. The chief medical officer of health for Budapest described the devices for eliminating noise which must now by law be incorporated in all new buildings. There were many other interesting papers and each was followed by a lively discussion.

MEMORIAL TO SIGMUND PURJESZ

Dr. János Ángyán, professor of internal medicine at the University of Pecs, lately delivered a lecture in memory of Sigmund Purjesz, formerly professor of

[1] This work was reviewed in THE LANCET of June 19th (p. 1476).

clinical medicine at the University of Budapest, whose energetic fight against the cholera epidemic which raged in Hungary during the 'nineties probably saved Western Europe from the ravages of this scourge. Prof. Ángyán said that it was the duty of a professor of medicine to be informed on current problems of social medicine and to show tolerance in dealing with questions of ethics arising in his practice. He must be able to help his patients to adjust themselves to the changes of everyday life and be able to bring forward practical solutions to their problems. Purjesz had considered that this could best be achieved by a friendly relationship between doctor and patient which was well exemplified in his own large consultant practice. He always strove to increase the public's faith in the medical sciences. Prof. Ángyán went on to say that in the world of to-day where social changes are so swift and when medical practice is also being rapidly modified it was more important than ever to maintain between doctor and patient that spirit of friendship which Purjesz had advocated.

KORÁNYI SCHOOL

When Prof. Alexander Korányi had to retire from his chair on reaching the age-limit his clinic was disbanded. Voluntary contributions have, however, made it possible to re-establish his school in a well-equipped hospital with a medical and nursing staff largely drawn from the personnel of the former clinic. It is thus hoped that the scientific work of his school may be carried on without interruption.

THE MEDICAL ART SOCIETY

THIRD ANNUAL EXHIBITION

THE outstanding painting at the third annual exhibition of the Medical Art Society, now being held [1] at the house of the Royal Society of Medicine, 1, Wimpole-street, W.1, until July 14th, is "Mount Aureol, Sierra Leone" (31), by A. C. Dalzell. Through a pattern of interwoven tree-trunks, of variegated hues, there is a glimpse of a sunlit settlement. The firmly handled branches bend and writhe with a natural rhythm, and one is reminded of similar studies of trees by Ethelbert White or of Epstein's water-colours of Epping Forest. An artist with a true feeling for tree growth is rare. In his pleasant study of trees beside a waterway (19) A. B. Hewlett also makes the pattern of the leafless branches the main feature. But his branches have the air of being stuck on. No medical artist was fonder of trees than Squire Sprigge. Four of his water-colours are shown this year, and in all of them trees and foliage are the theme. The best of them is probably "The Pond" (49), but "New Forest Trees" (52), sketched before the early spring shoots have appeared, is a tender note of graceful tree forms.

As last year about three-quarters of the subjects are landscapes. There are about a dozen still-life paintings, very few portraits, one good figure study (of men working on a chalk bank (74) by Charles Pannett), and no interiors or problem pictures. While not as varied an exhibition as last year the general standard of work is appreciably higher.

Among the oils, an attractive little painting by H. D. Gillies is a view of Pegwell Bay, from the Maiden, Sandwich (42). The line of the edge of the green, continued by the foreground bunker, is good composition, while the flag and its shadow play their part. Charles Pannett's view of Wapping Reach (2) is a vivid study of shipping, barges, and riverside wharves, with convincing local colour but with an unconvincing sky. Helena Wright's five studies of Marra Kech provide an exotic note; and John Rammell has gone to the Pyrenees for his "Punta Espada" (9), and H. D. Gillies to Iceland for his "Headwaters of the Landa" (46). "Cutting Peat in Connemara" (36) and "Sands at Killary Bay, Connemara" (26), both by Edith R. Magill, reveal a warm sympathy for the Irish mountains and countryside. The sun-flecked courtyard (40) is something of a novelty, as it is an attempt by T. H. C. Benians to depict the Italian courtyard from the description in the novel "Anthony Adverse."

Portraits this year are disappointing, the best being that of a man by R. V. B. Emmons (38). H. B. Maitland's portrait of a George Belcher type of charwoman (18) just verges on caricature. Among several very good flower studies in oils, the cool "Christmas Roses" (1) by Cuthbert Lockyer, the vibrant "Chrysanthemums" (24) by W. Wilson, and the more formal lily flower-piece (22) by Emanuel Miller are conspicuous.

The best of the water-colourists showing this year is probably E. W. Twining. He has three exhibits, and "Sheep-fold, Hackpen Hill, near Marlborough" (48) shows his technical skill to good advantage. The elements of this picture are beautifully simple, and it relies for its effect on moist washes which make full use of the white of the paper. Another capable water-colourist is Henry Wilson. "The Old Windmill" (105) was almost too obviously a good subject for an artist. But in "West Street, Corfe Castle" (106) he convinces one of his interest in the old houses, the church tower, and the curious fall of the road. John Hay's work is also looked for. He has sent a study of a magnificent copper beech tree (92), and a sensitive view of St. Ives (93). Cornwall is also represented by C. Lockyer's "St. Michael's Mount" (104), Devonshire by Robert Worthington's "Seaton Bay" (81), a good impression of rocks and spray, and H. S. Raper's "Sidmouth" (50), and Dorset by Robert Worthington's "On Batcombe Down" (76). There is capable landscape work by J. F. Robinson, E. A Barton, and H. Elliott Blake.

A few unexpected subjects are hung. Philip Manson-Bahr has two studies of the female eyas goshawk, "baiting" and "scanning" (99). E. A. Barton's "After the Squall" (98) is a startling piece of meteorological notation. Among the pastels, Herbert A. Lake's likeness of "Viscount" and "William" (70) is an affectionate study of two horses at grass. R. Hallam has sent three sepia drawings, called "The Discussion" (114), "Flower Sellers" (111), and "The Orchestra" (110). They stand by themselves as pictorial comments on life which few doctor artists seem inclined to make. The picturesque is another note seldom met in this exhibition. It is, however, to be found in C. Lovatt Evans's "Street Scene in Bruges" (65) and Oliver Horsley Gotch's "Bar-le-Duc" (101), the latter making good use of broad brushwork.

A notice of the exhibition would be incomplete without reference to L. Spira's expressive sculptures. The group of the three Volga boatmen (11) suggests well their ponderous haul, while the musical phrase engraved on the base leaves one in no doubt as to their identity. The group of figures (12) is not linked to a subject but is full of feeling. Who are these weary peasant folk, led by an aged man, and dragging a child after them? It is a compelling piece of

[1] The exhibition will be open from noon to 6.30 each day (except Saturday) up to and including Wednesday, July 14th. Admission is free without ticket.

modelling, whose realism makes the sculptured medallion done by John Bacon, R.A., in 1768, which is on the wall immediately above it, seem a piece of pedantry.

KING EDWARD'S HOSPITAL FUND FOR LONDON

THE annual meeting of this Fund was held at St. James's Palace on June 25th. The DUKE of KENT, in the chair, read the following message from King George :—

I would like to assure the Council of my constant interest in the work of the King's Fund for the hospitals of London, and of my gratitude to those who, by their devoted services, contribute so much to its welfare. I send my best wishes for the future of the Fund and of the hospitals which it helps to support.

The Duke said that the Fund had received last year, in subscriptions, donations, and legacies, about £98,000, besides the income from investments, and that this left a deficit on the year's working. To the annual distribution of £300,000 had now been added the district nursing distribution of £2000. This was based on the number of patients sent by hospitals to the district nursing associations, to receive nursing attention at home instead of at the out-patient departments, and it was thus part of what the King's Fund was doing to reduce out-patient waiting.

The Fund had acquired other functions than the collection and distribution of money. There was, for example, the administration of the stock of radium lent to hospitals, which had been increased to 17 grammes. Four special reports had been prepared and published for the assistance of hospitals. The first was an explanatory memorandum on the Voluntary Hospitals (Paying Patients) Act, which was passed in May, 1936, and facilitated the provision of pay-beds in addition to ordinary beds. The second was a new memorandum on fire precautions at hospitals, and it embodied the latest experience of both the voluntary and the London County Council hospitals. The third report showed how greatly the voluntary hospitals of London had increased their work, their expenditure, and also their income during the last 15 years, in spite of having to face the rise in prices in addition to the constantly increasing cost due to the advances of medical science. The fourth was the new memorandum (annotated on p. 31) on the reduction of waiting in out-patient departments. The King's Fund had also taken a leading part in the conferences that led to the numerous hospital flag-days being combined. They were greatly indebted to Lord Wakefield for a generous gift that had enabled the committee to undertake the preparation of a new hospital film. During the present month also an anonymous donor, who had given £1000 each year during the past few years, had transferred to the Fund about £30,000 in securities, which should bring in that income permanently.

ACCOUNTS FOR 1936

Sir EDWARD PEACOCK, the honorary treasurer, in moving the adoption of the accounts, said that it was very desirable that there should be no reduction in the distribution of £302,000, but there must be a substantial increase in income if this was to be avoided. Until 1934 current receipts provided the amount required. In 1935, however, there was a shortage of nearly £7000 and in 1936 another shortage of over £7000. But for some exceptional income from investments during the year the deficit would have been very much larger. For eight years legacies had remained very steady at between £60,000 and £70,000 a year, but in 1936 they had amounted to only £44,000. On the other hand, large donations had been kept up mainly owing to anonymous gifts of £15,000 and £10,000 in the last two years from one whose donations in the past fourteen years now totalled £88,500. The anticipated permanent decrease in income from investments owing to the Silver Jubilee distribution and to the fall in the value of money had so far been balanced by an increase in certain dividends and by the income from the capital gift of £20,000 from King George V which now appeared permanently on the balance-sheet. He hoped that they might be able also to create a special fund for assisting hospitals to carry out some specially important scheme or to overcome unusual financial difficulties. The needs of the hospitals did not grow less, and those who recognised the claims of the London hospitals but had no special knowledge or attachment to guide them in choosing a particular hospital, would find in the King's Fund the ideal agent for carrying out their wishes in the most effective way.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Capt. T. Creaser to rank of Surg. Rear-Admiral.

Surg. Capts. R. F. P. Cory to *Pembroke* for R.N. Hosp., Chatham; and H. M. Whelan to *Afrikander* for R.N. Hosp., Cape of Good Hope.

Surg. Comdrs. W. P. Vicary to *Cardiff*; J. D. Bangay, O.B.E., to *Victory* for R.N.B.; T. Madill to *Victory* for R.N. Hosp., Haslar; J. F. M. Campbell to *Drake* for R.N.B.; E. B. Pollard to *Pembroke* for R.N.B.; and W. J. Colborne and J. Hamilton to *President* for course.

Surg. Lt.-Comdrs. C. H. Egan to *Pembroke* for R.N.B.; H. A. Clarke to *Norfolk*; S. K. Foster to *President*; C. D. D. de Labilliere to *Pembroke* for Chatham Dockyard; and F. G. V. Scovell to *Orion* (on recommg.).

Surg. Lt.-Comdr. J. G. Maguire to be Surg. Comdr.

Surg. Lt. H. E. B. Curjel to be Surg. Lt.-Comdr.

Surg. Lt. C. V. Harries to *Exmouth*.

Surg. Lts. P. G. Stainton to *Drake* for R.N. Hosp., Plymouth; R. M. Kirkwood to *Victory* for R.N. Hosp., Haslar; and W. B. Taylor to *Pembroke* for R.N. Hosp., Chatham.

ROYAL NAVAL VOLUNTEER RESERVE

Proby. Surg. Lt. T. D. G. Wilson to be Surg. Lt.

ROYAL AIR FORCE

Flight Lts. J. C. Blair, L. E. A. Dearberg, R. S. B. McClean, and D. J. Sheehan have been provisionally selected for permanent commissions, subject to physical fitness.

Lt.-Col. R. F. Bridges, R.A.M.C., has been awarded the Alexander memorial prize for the year 1936 consisting of a gold medal and a sum of £40. The prize is awarded annually to an officer of the R.A.M.C. for professional work of outstanding merit.

Maj. A. G. Harsant, O.B.E., R.A.M.C., has been awarded the Leishman memorial prize for the year 1936, consisting of a silver medal and a sum of £30. The prize is awarded annually to an officer of the R.A.M.C., or of the Army Dental Corps, for work of outstanding merit.

Dr. R. Lewthwaite, Colonial Medical Service, has been awarded the North Persian Forces memorial medal for the year 1936 for his paper on the Pathology of Tropical Typhus (rural type) of the Federated Malay States, published in the *Journal of Pathology and Bacteriology*, January, 1936. The medal is awarded annually for the best paper on Tropical Medicine or Hygiene published in any journal during the preceding twelve months by a medical officer, with less than twelve years' service.

SIR SQUIRE SPRIGGE

THE following are extracts from some of the notices that have appeared in daily and weekly journals on the death of the Editor of THE LANCET.

British Medical Journal

Squire Sprigge was a man of exceptional ability and force of character. His mind had been trained in the discipline of the classics under a great head master; its edge was sharpened by the study of science at Cambridge, and made sharper by the study of mankind at St. George's. The practice of medicine had no appeal for him; what he liked was the battle of life, the contest of mind with mind. He was widely read without bookishness, witty of speech, incisive of pen when the mood took him, and dexterous to a high degree in the handling of men and situations; the more difficult the tangle or the tougher the problem, the more he enjoyed finding a way through or round it. When on his mettle—and until the last few years he was always ready for anything or anybody—Sprigge could hold his own against a keen academic brain or in combat with hard business wits. . . . By nature clear-cut and by habit undemonstrative, Squire Sprigge had no use for sloppiness or gush. But he felt and inspired real affection, and thought much about his friends and helped them with both hands when need arose. Wit and humour do not always go together; "S. S. S." had both, and a keen appreciation of them in other people. He was a most stimulating and delightful companion, at work or at play; a wise counsellor; a loyal son of his school, his college, and his hospital; and above all things faithful to the great journal which he served for forty-five years.

One more thing should perhaps be said here. The thirty years' war between Ernest Hart and the Wakley family, which poisoned the relations between *British Medical Journal* and *The Lancet*, was abhorrent to urbane and magnanimous men like Dawson Williams and Squire Sprigge. Hart's death gave them the opportunity to make open peace and establish private goodwill at each corner of the old block of houses in the Strand. Forty years have passed and the two journals now live further away in new homes. The healthy rivalry goes on, but there has been no break in the cordial relationship begun by Williams and Sprigge and continued by their fellow workers.

The Times

Medical journalism owes him a great debt, and in maintaining the highest traditions and promoting the efficiency of his profession he did a national work. Under his control *The Lancet* steadily kept on its way, altering with the times, but always regarded with increasing respect by the profession. Its stormy youth and bitter middle age were succeeded under Sprigge by a serene rejuvenescence rather than by old age, and its present high position is the direct result of his labours.

Sunday Times

Sir Squire Sprigge carried his years lightly. There was about him an odd combination of the clubman and the country gentleman, with something more than a dash of the man of letters.

Morning Post

The medical profession has been deprived of a most valuable servant. Sir Squire set a high standard for medical journalism, and the 30 years since he has been in charge of *The Lancet* have seen many important advances in medicine made available promptly to the whole profession through its columns. At the same time, it has kept a sharp eye for spurious claims and false prophets.

Yorkshire Post

Under his rule, *The Lancet* has been strictly a journal about medicine for medical men. Sprigge's view was that a technical treatment of problems eliminated the busybody and the quack. Not that doctors were to be permitted the airs of a privileged caste; Sprigge was always ready to laugh at what he called "medical priest-craft."

Truth

Very few men have achieved and maintained for so long an eminence such as his, while at the same time remaining so universally respected and loved. His knowledge of science and literature was vast, his powers of correctly appraising situations and people exceptional, his flair for matters of policy unrivalled; but to those who knew him well, these were not his most important qualities. He will be remembered rather for a penetrating yet always kindly humour which made his companionship a delight to people of all ages; for the perfect courtesy, consideration and loyalty with which he treated those who worked with and under him; for the understanding and encouragement which he invariably showed to young people, not least to those of his own profession; for the qualities of steadfastness and integrity which bore fruit in the main task of his life—his journal; and for a degree of personal modesty which made it possible for him to attain pre-eminence with and through the active work of others, and at the same time never incur a single person's enmity.

Medical Officer

Under his direction the world reputation of *The Lancet* was more than maintained, and on international occasions Sir Squire was acclaimed by foreign colleagues as an outstanding figure in medical journalism. He will be gratefully remembered by public health workers for his encouraging interest in preventive medicine. He was quick to recognise contributions of value to the public health service, and no sound movement in connexion with hygiene and health administration failed to secure his influential support.

Practitioner

He set a high standard for medical journalism and the ethical outlook of British medical journals was his constant concern. He sought to improve the relations between the public and the medical profession by an insistence that medical etiquette existed essentially for the smoother performance of the healing art. His life has been nobly spent in an important and essential part of professional organisation, and he will be remembered with gratitude and affection.

Manchester Guardian

Sir Squire had long served the medical profession as a chronicler of its progress, an historian of its traditions, and a diplomatist with perhaps a unique knowledge of the profession's relations with Government departments and with the other professions.

For thirty years, during which the public aspect of medical work has altered even more than the map of Europe, Squire Sprigge was responsible week by week for a chronicle of the changing

face of medicine. Such a chronicle reflects the chronicler, and in his charge *The Lancet* avoided aggressiveness and allowed facts to speak for themselves. He was critical, fastidious, and urbane, but to the end of his life—and perhaps increasingly—he was liberal.

He found it easy to get to know people, and he had a quick appreciation of their value and significance as well as of their foibles. He could refuse requests either bluntly or gracefully, as circumstances required; but he preferred each man to have his say, and often took immense trouble in helping him to say it effectively. Modest in his relations with contributors, he was also modest in controlling his office. This meant that he allowed as much self-expression as possible and said very little when accidents happened; but, though he freely delegated responsibility to his juniors, he had a disconcerting willingness to get on without them.

The lessons of good government, as well as of diplomacy, could readily be learnt in his company, and his influence on his own profession was perhaps all the greater because it was inconspicuous. His behaviour was civilising as well as civilised, and medicine, like many individuals, has gained much from his long life in its service.

MEMORIAL SERVICE

At the memorial service, held on June 22nd at St. Martin-in-the-Fields, the Rev. R. J. Northcott took the service, and Viscount Dawson of Penn, President of the Royal College of Physicians of London, gave the address published in *The Lancet* last week. Among those present were:

Lady Sprigge (widow), Mr. and Mrs. Cecil Sprigge, Mrs. Mark Napier, Miss Annabel Sprigge, Mrs. J. J. Sprigge, Sir Edmund Spriggs, Miss Jones, Miss E. C. Jones, Commander and Mrs. W. Ross, Mrs. E. B. C. Lucas, Mrs. Frank Sprigge, Mrs. K. Sprigge, Mrs. Kingsley Game, Mrs. Jackson, Miss Spriggs, Mr. J. P. B. Ross, Mrs. Hornby, Mrs. O'Malley, Miss O'Malley, Mr. Napier Clavering.

Mr. R. Percy Hodder-Williams and Mr. Ralph Hodder-Williams (Proprietors of *The Lancet*), Dr. Egbert Morland (Assistant Editor of *The Lancet*) and Mrs. Morland, Mr. F. G. H. Holt (Manager of *The Lancet*), Mr. and Mrs. A. Bennett, Mr. D. L. Blackman, Mr. F. A. Brooks, Mr. S. C. East, Dr. T. F. Fox, Mr. H. Gasson, Miss Ellinor Grant, Dr. M. H. Kettle, Miss G. M. Lomax, Mr. F. W. Martin, Mr. A. T. Mayo, Mr. W. M. Moody, Dr. and Mrs. D. W. Moynagh, Mr. J. A. Norris, Mr. E. M. Ryder, Miss F. E. Stilwell, Mr. H. Thompson, Mr. L. E. Ward, Mr. F. W. White.

Sir Arthur MacNalty (representing the Minister of Health), Sir Laurence Brock (representing the Board of Control), Dr. Alfred Cox (representing British Health Resorts Association), Mr. J. Crowlesmith (representing Messrs. Hazell, Watson and Viney), Dr. C. M. Fegen (representing the London and Counties Medical Protection Society), Mr. Howard B. Figgis (representing the trustees of Uppingham School), Mr. Michael Fletcher (representing the *Practitioner*), Prof. E. J. Garwood (representing the United University Club), Sir Charles Gordon-Watson (Vice-president of the Royal College of Surgeons and representing the President), Lieut.-General Sir James Hartigan (Director-General of Army Medical Services), Dr. N. G. Horner (Editor of the *British Medical Journal*), the Rev. Percy Maryon-Wilson (representing the Magdalen College Mission), Mr. H. H. Rew (representing the Conjoint Examining Board in England), Miss P. Strachey and Miss K. M. Halpin (representing the London and National Society for Women's Service), Mr. Bertram Sutton (representing the Medical Sickness Annuity and Life Assurance Society), Dr. G. de Bec Turtle (representing the Royal Society of Medicine), Mr. Cecil P. G. Wakeley (Editor of the *Medical Press and Circular*), Dr. Jane Walker (representing the Medical Women's Federation), Mr. R. F. West (Managing Editor, the *Medical Press and Circular*), Sir William Willcox (representing the Society of Apothecaries), Dr. C. M. Wilson (Dean of St. Mary's Hospital medical school).

Mr. Johnston Abraham, Mrs. E. A. Armstrong, Miss Armstrong, Mrs. Harold Atkins, Mr. Henry Baerlein, Mrs. W. Baldwin, Mr. Harold Barwell, Mr. C. E. A. Bedwell, Mr. H. V. Berry, Mr. Digby Besant, Mr. G. B. Besant, Major P. E. Besant, Mr. Anthony Bevir, Mr. Cecil Binney, Dr. and Mrs. C. P. Blacker, Dr. J. Blomfield, Dr. R. D. Brinton, Mr. F. Gordon Brown, Mrs. Francis Carbutt, Miss Carbutt, Mrs. J. Clifton, the Earl of Crawford and Balcarres, Sir Raymond Crawfurd, Mrs. Harry Daniel, Mrs. Darrah, Mrs. H. M. Davies, Viscountess Dawson of Penn, Dr. Vincent Dickinson, Mr. and Mrs. Dreyfus, Sir James Dundas-Grant, Mr. W. McAdam Eccles, Mr. Trystan Edwards, Mrs. G. S. Elliston (also representing Captain G. S. Elliston, M.P.), Lady Emmott, Mr. J. Gardner, Mr. David Gleed, Dr. S. R. Gloyne, Miss I. G. Goddard, Mr. F. C. Goodall, Dr. N. M. Goodman, Mr. Gavin Gordon, Mr. E. S. Grew, Sir William Hale-White, Dr. J. P. Hedley, Mr. E. B. Hoare, Mrs. F. Holdship, Dr. and Mrs. E. R. Holiday, Dr. Howard Humphris, Mrs. William Hunt, Mr. and Mrs. Wilfred Jackson, Dr. G. W. B. James, Commander R. C. Kinnear, Mrs. Kinnell, Dr. C. E. Lakin, Lady Langdon-Brown (representing Sir Walter Langdon-Brown), Dr. G. F. McCleary, Lady Chalmers Mitchell, Miss Montizambert, Mr. K. Mulock, Dr. C. S. Myers, Mr. T. Nicholson, Dr. Sidney Phillips, Mr. W. B. E. Ranken, Sir William and Lady Rothenstein, Mrs. H. Bentinck Ryan, Lieut.-Commander Malcolm Sanders, Captain E. G. Saunders, Mrs. G. Saunders, Miss Schooling, Mrs. Baliol Scott, Sir Charles Sherrington, Dr. Maxwell Simpson, Mr. J. Berthon Sparke, Dr. Herbert Spencer, Mr. Neville Stafford, Sir Thomas Stanton, Miss Stoney, Mr. J. H. Tayler, Mr. Ernest Thesiger, Mrs. M. A. Thompson, Mr. George Thomson, Mr. G. H. Thring, Monsieur R. Truptil, Miss Gertrude M. Tuckwell, the Rev. P. Waddington, Mrs. Geoffrey Whitworth, Mrs. L. L. Whyte, Major A. R. Wood, Sir Almroth Wright.

THE LANCET 100 YEARS AGO

July 1st, 1837, p. 526.

From an account of a case of pneumonia with cerebral symptoms in a child of 4 years treated at the Hospital of Sick Children, Paris.

. . . we cannot but reflect with pleasure on the rapid march which the science of medicine has made since medical men have begun to trace up symptoms to the organic derangements on which they depend, instead of contenting themselves, as is still too frequently the case, with combatting symptoms as they occur, heedless altogether of the material lesion from which such symptoms arise. The foregoing observations are peculiarly applicable to the diseases of children.—Reflect, for an instant, on the cavalier manner in which diseases of children and of infants in particular are treated. With some, worms form the primum mobile of more than two-thirds of the affections of children; others find it more convenient to lay everything to the account of dentition; a third class of practitioners, somewhat more advanced than the former, imagine they have removed all difficulty by pronouncing the word "fever."—How many affections of the head, of the abdomen, and of the chest, are daily treated under the commodious denomination of "Infantile remittent fever"? Even our standard works on the diseases of children, commented and revised by men high in the profession, and possessing vast practical knowledge, are, for the most part, disfigured, or rendered altogether unintelligible, by dissertations on "Inward fits," "Fainting," "Nightmare," "Tooth-ache," "Worms," "Warts," and "Corns." . . . The observations which we have just made, might be easily extended; . . . we select one of the numerous cases which we possess, as presenting an example of an organic disease, which in certain countries where medical men still affect to despise the assistance of auscultation and percussion, would have been mistaken for "fever with cerebral symptoms,"—to use the language *à-la-mode*.

CORRESPONDENCE

THE REVISED MEDICAL CURRICULUM

To the Editor of THE LANCET

SIR,—Sir E. Graham-Little's letter in THE LANCET of June 26th presents several points which call for comment. In the first place it seems to be taken for granted that, because the latest resolutions of the General Medical Council are somewhat more detailed than heretofore, the period of medical study must therefore be lengthened. This is by no means necessary, as a curriculum which fulfils the requirements of the new resolutions has been for many years the practice in Sheffield where 5½ years is the usual duration of the medical course. It seems to be a common error to suppose that because the G.M.C. emphasise the teaching of dietetics, therapeutics and prescribing physiotherapy, principles of nursing, child welfare, psychology, &c., these must now each be taught by a lecturer or clinical teacher specially appointed for the task. Surely all of these have in the past been taught by intelligent clinical teachers in relation to their own particular cases; it would be absurd, in the education of students, to remove each of these divisions of one subject from their natural clinical setting and attempt to deal with them as excuses for a new specialist department. Nor, I imagine, is this the intention of the G.M.C.

Then the direction for training in preventive medicine is criticised as being "nebulous," and the opinion given that it will be ignored. Surely teachers in medical schools realise their responsibilities in this matter. Do they require the G.M.C. to draw up detailed instructions and stand by with a big stick to see they are obeyed? It is much better that medical schools should lead instead of having to be driven by the G.M.C.; those which are so backward that they have to be driven are not likely to gain in reputation from the graduates they turn out.

Sir E. Graham-Little deplores the tendency to produce a "general specialist" instead of a general practitioner. So do we all, but this again is a matter for the attention of individual schools in ensuring that they employ teachers with a wide outlook and do not magnify each branch of a subject into some specialty requiring a new department and full-time staff who must justify their existence by demanding an undue proportion of the student's time. I think it is perhaps unfortunate that the G.M.C. has found it necessary to attempt the direction of medical education by over-detailed instructions which are in danger of being interpreted too strictly in the letter rather than in the spirit in which I feel they were intended.

With regard to the alleged addition of nine months to the clinical course by making clinical instruction continuous, it should be pointed out that students attending hospital in most, if not all, of the provincial schools do in fact carry on their clinical appointments during University vacations, with perhaps a fortnight's holiday in the summer.

Finally the statement that "the medical profession is becoming practically closed except to those who have abundant financial means" can easily be shown to be an exaggeration by investigation of the occupations of the parents of medical students, at least in provincial medical schools.

I am, Sir, yours faithfully,

G. A. CLARK,
Dean of the Faculty of Medicine,
University of Sheffield.

June 28th.

THE OVER-TREATMENT OF GONORRHŒA

To the Editor of THE LANCET

SIR,—Dr. Hanschell's letter in THE LANCET of June 26th appears to me to be written under a complete misapprehension. I was not attacking individuals as such, but the principle of the segregation of venereal disease and the methods of treatment. A Member of Parliament may attack a colleague's principles in speech or print and yet retain his goodwill. Two lawyers may fight over a case in public and yet be the best of companions in private. Dr. Hanschell is a guide, philosopher, and friend to thousands of sailormen all over the seven seas; his disinterested work is well known to the profession, and I hope he will believe me when I say that I was not conscious of discourtesy to any individual when I attacked the training and the outlook of the venereal specialist.

Several of your correspondents have given examples of ineptitude. I weighed in with another. Dr. Hanschell now provides two excellent ones on the other side of the picture. All of us in fact have been giving way to the very human weakness of the *argumentum ad hominem*, one of the pitfalls in formal logic. I repeat "giving way," for none of us really believes in the validity of arguing from the particular to the universal. Because, for instance, a genito-urinary surgeon and a physician happened to be inept is no argument against a man who wishes to treat venereal disease being either a first-class physician or an expert urologist. I am sure Dr. Hanschell does not mean to suggest this, any more than I mean that because some venereal experts are inexpert all are tarred with the same brush. Of course not. I have lived long enough to be aware of the "painful pleasure of correcting and being corrected by others" as Dr. Hanschell happily remarks. What troubles me is the increasing amount of over-treatment I am continually noticing. And I may say I do not appear to be alone in this, judging from the amount of confidential information that has been pouring in, some from people who will not, or dare not, write themselves.

I am appalled when I think of the amount of stricture and chronic prostatitis that is being prepared for the future by the chemical urethritis and the traumatic mangling of the present. And I hope Dr. Hanschell will forgive me when I say that I think this is due to the "service mind," the mind that thinks in terms of courses of treatment, and forgets it is treating an individual and not a disease only.

I have been reminded by him of certain great men who were regimental medical officers. But had any of them got the service mind? I think not. John Hunter, as the recent Portugal letters show, was a thorn in the flesh to everyone over him. It was with the utmost difficulty he was dissuaded from fighting a duel with one of his superior officers. He must have been a perfect nuisance. Laveran was totally neglected by his service until he was discovered by the Italians. Ronald Ross and Peter Freyer I knew well. They both got out of the distinguished service to which they belonged as soon as they could, and their vitriolic comments on their former colleagues were often more amusing than truthful. None of these people had service minds. If they had had they would never have been heard of.

With Mr. King's philosophic letter I find myself in considerable agreement. He admits that there is over-treatment and explains it as due to a fear of

under-treatment. But surely, surely, it is the patient one treats, not the disease.

And he admits that "there is at present small incentive for a mind with the necessary medical and surgical background" to make venereal disease his life-work. That is just what I have been complaining about. I think that young men taking up venereal disease are not having a fair deal. They are not being properly trained; they are not being given a chance. In gonorrhœa they are being told that their province stops at the verumontanum. Like Moses on Pisgah they may gaze at the entrance to the Promised Land (the trigone) but they may not pass therein. They are told that their business is with one coccus only. The ubiquitous *Bacillus coli* even is not for them. Can anything be more unscientific!

Mr. King makes one good debating point when he states that the psychology of shame makes it convenient for one man to treat all the venereal diseases. That is true, but often it is the herding together of patients in a clinic labelled "venereal" that makes that feeling acute. People like myself at the Lock Hospital have had to struggle against this all our lives, but with two hundred years of history behind us we could not hope to alter this psychological disadvantage. The general hospitals have no such special handicap. They could have grasped the opportunity of treating these people in the open Most of them have failed to do so.

Mr. King and Dr. Hanschell both mention the same point: that it was the failure of the urologist to tackle gonorrhœa that made the V.D. clinics necessary. That is true; and to the urologist I should like to add the gynæcologist. But urology is a department of surgery which has arrived in the lifetime of many still living. It has been advancing rapidly all the time, and I am afraid it has rather neglected gonorrhœa. At present there are not enough men with urological training to go round. When there are we may hope to see some scientific improvement in the treatment of this time-immemorial disease.

I am, Sir, yours faithfully,

J. JOHNSTON ABRAHAM.

Queen Anne-street, W., June 28th.

PHYSICAL SIGNS: ARE THEY WORTH WHILE?

To the Editor of THE LANCET

SIR,—I was very pleased to read the report of Dr. C. E. Lakin's Bolingbroke lecture to the South-west London Medical Society in your issue of June 19th. Dr. Lakin said that owing to radioscopy the high value of physical signs was receding from the minds of medical students, and he instanced cases in chest affections where the physical signs were necessary to interpret the results of radioscopy. Physical signs revealed the volume, density, expansibility, conductivity, and moisture in the lungs; the physical conditions were demonstrated. On the other hand "the interpretation of radiograms was often difficult and sometimes misleading."

In a letter contributed to your columns in 1903 (republished in my recent work on Asthma, &c.) I said that in early phthisis the results yielded by the X rays are "very frequently unreliable, and at the best, are difficult of interpretation." Despite the improvement of radiological technique I still hold this opinion. Radiography cannot show the impairment of elasticity at one apex recognisable by other means, nor can it differentiate between an active and an arrested lesion. My letter referred also to the excursion of the diaphragm, which is more accurately determined by Litten's sign, by percussion and auscultatory resonance. In conclusion I maintained that the results obtained by physical diagnosis are "earlier in point of time, alone trustworthy in respect of differentiation, and in any stage of the disease, free from the pitfalls of radioscopy." The remark of Dr. Lakin is very arresting, when he says he wonders whether those who decry physical signs had ever got into the way of eliciting them.

I am, Sir, yours faithfully,

Harley-street, W., June 24th. A. G. AULD.

CONTINUOUS VENOUS HUM IN CIRRHOSIS OF THE LIVER

To the Editor of THE LANCET

SIR,—Dr. Bates's account of a continuous venous hum in a case of cirrhosis of the liver, published in your issue of May 8th, is of interest in view of a similar case I saw several years ago as house physician to Dr. Drummond at Addington Hospital, Durban.

The patient was a policeman aged about 45. There was a history of abdominal distension, progressive weakness, and dyspnœa on exertion for several months. He was not a heavy drinker. He had suffered from malaria several years previously. When first seen abdominal findings were slight, but within a month or two there were obvious signs of free fluid in the abdomen, and dilated veins were visible over the right hypochondrium, axilla, and anterior chest wall. He died shortly after a severe hæmatemesis. Unfortunately a post-mortem examination was not allowed. The Wassermann reaction was negative.

The murmur was present from the beginning. It was loud, continuous, and roaring and was heard over the whole precordium, with maximum intensity immediately above the xiphisternum. Deep inspiration or pressure with the finger on the xiphisternum abolished the murmur.

I have since come across a reference to such venous murmurs by Gwyn (*Amer. J. med. Sci.* 1930, **180**, 525; quoted by A. G. Gibson, *Med. Annu.* 1932, p. 311). Dissection in one of these cases showed that the murmur depended upon the fact that an emissary vein from the superior abdominal region entered a foramen in the sternum to reach the internal mammary vein. Hence pressure put upon the foramen obliterated the murmur. Gwyn presents two illustrations showing the situation of fissures in the sternum and points at which the murmurs were best heard in his two cases. I am, Sir, yours faithfully,

Cape Town, June 14th. J. MIRVISH.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JUNE 19TH, 1937

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 0; scarlet fever, 1549; diphtheria, 1026; enteric fever, 24; pneumonia (primary or influenzal), 574; puerperal fever, 39; puerperal pyrexia, 125; cerebro-spinal fever, 18; acute poliomyelitis, 12; acute polio-encephalitis, 4; encephalitis lethargica, 4; dysentery, 19; ophthalmia neonatorum, 139. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on June 25th was 2908, which included: Scarlet fever, 729; diphtheria, 830; measles, 152; whooping-cough, 449; puerperal fever, 13 mothers (plus 11 babies); encephalitis lethargica, 281; poliomyelitis, 3. At St. Margaret's Hospital there were 26 babies (plus 14 mothers) with ophthalmia neonatorum.

Deaths.—In 123 great towns, including London, there was no death from small-pox, 1 (0) from enteric

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PANEL AND CONTRACT PRACTICE

Change of Air

PRACTITIONERS often advise patients to go away from home to recuperate, and sometimes insured persons act on this advice without previously obtaining the consent of their approved societies—with the result that payment of their sickness benefit may be held up. The societies' rules usually provide that members in receipt of benefit must not leave the locality in which they reside without first obtaining permission from the society; and, while it is no part of the practitioner's obligations to instruct insured persons in the rules of their societies, a tactful reminder may well prevent misunderstanding and annoyance. Permission is necessary whether the patient is being provided with an intermediate convalescent certificate or not. If he has no such certificate it is well to remind the patient that in order to secure payment of benefit he must obtain weekly certificates from a local practitioner.

Alternative Occupation

An approved society recently complained that an insurance practitioner had issued a final certificate to a patient and had endorsed thereon a recommendation that payment of disablement benefit should be continued for a limited period to permit of the insured person's seeking alternative employment—she was permanently incapable of resuming her normal work. In such cases the patient should not be certified as "incapable of work" unless in the certifying practitioner's opinion he is physically unable to perform any other suitable kind of remunerative work, whether at once or after a short course of training. When it is clear that an insured person has become permanently incapable of following his ordinary occupation it will be for his approved society to determine (subject to the member's right of appeal) for what period the payment of benefit should continue in order to allow the member reasonable time to qualify for some new form of occupation. But, again in order to avoid misunderstanding, it is well to explain to the patient that after the issue of the final certificate the payment of further benefit is a matter for determination by the society.

The Custody of Stationery

Warnings have been issued from time to time about the need to take care of National Health prescription and certificate forms. A stolen prescription form may, of course, be used to obtain medicines through insurance chemists, and though insured persons rarely have knowledge enough to write prescriptions that will secure the dispensing of medicines, they might readily obtain, for example, cod-liver oil and malt. With a certificate form it is not by any means difficult to forge what is in effect a blank cheque on the approved society's funds and special care should therefore be exercised to ensure that unused forms of certificate do not fall into the hands of unauthorised persons. A case has just been heard at Hereford in which an insured person submitted certificates to his society covering a period of four weeks which enabled him improperly to obtain benefit. The man admitted that he went to his doctor's surgery for treatment and while the practitioner was in another room he stole a book of panel certificates from the surgery desk. The society, in due course, referred the case to the regional medical officer, but the insured person took care to "resume work" before the date fixed for the examination. The magistrates, having heard a plea for clemency, discharged the man under the Probation of Offenders' Act, but he has to repay to the society in weekly instalments the money which he improperly obtained.

The Drug Tariff

The Drug Tariff is to be altered in form as from July 1st, 1937.

Clause 4 (2) of the Terms of Service for Persons supplying Drugs and Appliances provides that a chemist shall supply with reasonable promptness . . . such drugs and appliances as are ordered and shall, so far as is practicable, keep in stock for that purpose all those drugs and appliances mentioned in the Drug Tariff. Clause 3 provides that all drugs and appliances so supplied which are included in the Drug Tariff shall be of a grade or quality not lower than the grade or quality specified therein.

At the present time the Drug Tariff is divided into five parts, Part II containing the scale of dispensing fees, Part III a list of drugs and preparations, and Part IV a list of appliances. Hitherto it has been necessary for chemists to keep in stock for the purpose of insurance dispensing all the drugs and appliances mentioned in the Tariff, but the amendments will create a new section containing drugs and appliances which the chemist is not required to keep in stock, but by including drugs and appliances by name in the Tariff a standard or quality is set up and prices are available which may be taken as indicating the quality it is expected will be used in dispensing medicines for insured persons.

The old Part III of the Tariff now becomes Part IIIA. The drugs and preparations listed in this part will be those which so far as practicable must be kept in stock. The old Part IV now becomes Part IIIB and contains a list of appliances which similarly should be kept in stock. Two new sections named Part IVA and Part IVB, will contain, respectively, details of drugs and preparations and of appliances which chemists will not be required to keep in stock but must still, of course, be supplied with reasonable promptness. Dispensing fees in respect of entries in these four parts are set out in Part II of the Tariff. Some 26 drugs and preparations are being transferred to Part IVA and the names of 132 drugs and preparations will be added to the Tariff and listed in Part IVA.

Three preparations are being added to the list of what a chemist must keep in stock—namely, pil. digitoxin, tab. phenobarbiton, and tab. phenobarbiton soluble. Certain appliances, too, which chemists have hitherto had to keep in stock will now be listed in Part IVB, and additions to the Tariff to be listed in this part are sphagnum moss, spinal jackets, and tampons. One much-needed addition to the Drug Tariff is a standard quality for hypodermic needles, and another useful addition to Part IIIB is a specification for a new wound dressing.

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fever, 11 (0) from measles, 0 (0) from scarlet fever, 13 (3) from whooping-cough, 35 (6) from diphtheria, 41 (10) from diarrhœa and enteritis under two years, and 7 (1) from influenza. The figures in parentheses are those for London itself.

Four fatal cases of measles were again reported from Birmingham, 3 from Newcastle-on-Tyne. The deaths from diphtheria were scattered over 27 great towns, not more than 2 at any one of them. Liverpool and Birmingham each had 4 deaths from diarrhœa.

The number of stillbirths notified during the week was 310 (corresponding to a rate of 41 per 1000 total births), including 46 in London.

PARLIAMENTARY INTELLIGENCE

GROUNDS FOR DIVORCE

IN the House of Lords on June 24th the Marriage Bill, which has already passed through the House of Commons, was read a second time without a division.

Lord ELTISLEY, in moving the second reading, said that as introduced in the Commons the Bill undoubtedly was a controversial and contentious measure and much time had to be devoted to it in Committee. In the form in which the Bill now reached their Lordships, however, it represented a large measure of agreement between its promoters and those who were at first its most severe critics. The Bill attempted not only to deal with individual cases of hardship and unhappiness, but above all it strove to maintain and preserve the great and valued institution of marriage. It carried out most of the recommendations of the Royal Commission on Divorce and Matrimonial Causes of 1912, and it would bring our law more into line with the practice of the majority of civilised States.

Viscount FITZALAN OF DERWENT said that he did not intend to move the rejection of the Bill on second reading, but many noble lords might find it advisable to support its rejection on the third reading.

The Archbishop of CANTERBURY said that though he thought the Bill was certainly capable of amendment—and he hoped it would be amended—it had its real merits within the sphere of State law. Taking the measure as it stood, he could not honestly as a member of the House vote against the second reading. On the other hand, how could he resist the conclusion that he might be contributing to the gradual dissolution of the institution of marriage itself if, as the chief officer of the Church and therefore in a sense its representative, he were by a formal vote in that House to associate himself with the promotion of a Bill which, whatever merits it might have, contained proposals which were inconsistent with the specifically Christian principle of marriage? He could not take that responsibility. Therefore, if there was a division, he must simply stand aside.

Lord SNELL said he thought the Bill dealt with a great human, moral, and social problem, and it offered hope of a new life in the shape of a home and a family.

Lord ATKIN said that speaking generally he approved of the progressive parts of the Bill and strongly opposed its reactionary parts. He hoped the House would support the second reading and that the objectionable features would be removed in Committee.

The Bishop of ST. ALBANS said he believed the Bill would weaken instead of strengthen the institution of marriage, lead to an increasing number of divorces, and quite obviously expose more children than were exposed to-day to the dangers and ill-consequences that came from broken-up homes.

Lord ROCHE, speaking from his experience as a Judge, said that he regarded this as a necessary, beneficial, and on the whole wisely conceived Bill.

The Bishop of DURHAM said that he thought the Bill if it were passed so far from bringing the law of England into conflict with the law of Christ would bring them into a deeper and truer harmony. He supported the Bill because he believed that it would strengthen the hands of those who were seriously perturbed by the wave of licentiousness which had swept over the Western world in the wake of the Great War.

Lord ALNESS said that the Royal Commission's majority report was entirely in favour of making insanity a ground of divorce, since it differed from all other maladies, in that it involved a complete break-up of the household.

The Marquess of READING also supported the Bill.

The Archbishop of YORK said that while he believed it desirable that the Bill should pass into law, he did not think it appropriate that an occupant of the Bishops' Bench should vote for it.

The debate was adjourned and was resumed on June 28th.

The Bishop of BIRMINGHAM said he intended to vote for the second reading of the Bill. He was in favour of the provision that insanity, on the conditions laid down, should be a ground of divorce.

The Marquess of SALISBURY said he could not support the Bill. The stability of the marriage law was vital from the point of view of the State and the Bill would cause unrest and with unrest came immorality.

LORD DAWSON'S SPEECH

Viscount DAWSON OF PENN said that some of the previous speakers were disposed to attribute collusion and adultery to a weakening of the fabric of the normal sense, or even to licentiousness; but, he asked, is change always decadent? Are not the causes of our present troubles to be found in the changes in thought and in mind which have taken place in the course of the years. Why should the idea of marriage alone be expected to remain static? Where the kernel of marriage has been lost the tendency of the present age is to throw away the husk—and could we say that it is wrong? Surely the cure is to adapt the law to the prevailing mind of the community. Increase in divorce did not imply a corresponding increase in marriage failures because in former days more married people lived with their failures. With the advent of freedom and equality had come to women an increase of sex consciousness; the woman expected a sex-satisfied life just as she demanded equality of companionship. For these reasons women did in fact contribute more to the failure of marriage than they did in past times. Yet, said Lord Dawson, marriages which are successful to-day reach a higher level of happiness than at any previous period. Passing to the clauses of the Bill itself, Lord Dawson suggested that a minimum of five years married life was too long. Except for the younger women it would be destructive of the possibility of a second marriage. On the other hand, he regretted the absence from the Bill of any attempt to disentangle and remedy the causes of matrimonial disharmony in their early stages. Medical men knew how many misfits of marriage might have been put straight with the help of a little knowledge and understanding. He supported the granting of divorce for desertion and cruelty because both frustrated the purposes for which marriage exists. The yielding to a chance physical temptation was as naught compared with the cold calculation of desertion or with the year-long cruelty which could convert a home into a chamber of torment. He admitted the difficulties of making insanity a ground for divorce and offered his own contribution to the definition of insanity as a sufficient cause for divorce. It should, he thought, be either a continuous period of five years or ("and I regard this as very important") whenever a recurrent form of mental disease has been established; and he pictured the dread of the wife whose husband is in and out of a mental hospital over a period of years. Finally he asked that one small but important omission should be made good and homosexuality recognised as a cause for divorce, alike for men and for women. He regretted the omission from the Bill of inveterate alcoholism and inveterate drug taking; drug addiction, although more subtle than alcoholism, could easily bring destruction to family life. With these reservations he supported the Bill because it would in his judgment make more firm the institution of marriage and make life more honest, more just, and more in accordance with the facts of daily life.

In the House of Lords on June 28th the Methylated Spirits (Scotland) Bill was read the third time.

HEALTH ADMINISTRATION IN SCOTLAND

On June 24th in the House of Commons a supply vote for the Department of Health for Scotland gave opportunity for a long debate on Scottish health problems.

The Secretary of State's Review

Mr. ELLIOT, Secretary of State for Scotland, said that no one in Scotland was completely satisfied with the position which the country occupied, either actually or relatively. They felt that there were a great number of improvements which could be made and would have to be made in their health services and in housing, and that in some respects Scotland compared unfavourably with the nation south of the Border. There was no reason for despondency, but every reason for action, which must be continually pressed forward if they were to make Scotland what they all desired it to be, a twentieth-century nation fit to take her place in the line with the other nations. They had to press their activities as far as government was concerned along the lines of inquiry, administration, and legislation. Since the Committee last considered these Estimates there had been frequent inquiries and examples were those on rural housing and on public health services. The Maternity Services Act, which was recently passed through Parliament, and the vote for physical training, had both involved a great deal of activity on the part of the Department. In the sphere of legislation which was still under consideration he would refer as an example to the National Health Insurance (Juvenile Contributors and Young Persons) Bill, which was intended to close the gap between leaving school and entering into the medical benefit scheme, a gap which had been adversely commented upon by many people.

MATERNAL AND CHILD WELFARE

The rate of infantile mortality last year was 82 per 1000 births. That was higher than the rates for the previous three years, but lower than the rates before 1933. That was a disappointing fact, but the Committee would be glad to know that the rate for the whole country for the first quarter of 1937 showed considerable improvement over the similar period in 1936, and the rate for the 16 large towns taken over the five months showed that that improvement had continued. He drew attention to some figures which showed the health in Scotland had suffered. In the influenza epidemic the notified cases in Scotland jumped from 43,000 in 1935–36 to 123,000 in 1936–37. Cases of whooping-cough, which was very serious last year in Scotland, jumped from 1144 in the first quarter of 1936 to 8417 in the first quarter of 1937. In spite of these epidemics the health of Scotland continued to improve, taken generally, and over a long period of time there had been a very great improvement. The Government were by no means shelving the report of the Committee on Scottish Health Services. They were taking action along some of the lines recommended by it, but there were many more on which they would have to take action. The need for a new Sanitary Code and reorganisation of hospital services, for an extended general practitioner service, and for extended medical benefit to the dependents of insured persons were being dealt with.

Perhaps the most important of the Committee's recommendations referred to the maternal and child welfare figures. The Maternity Services (Scotland) Act, 1937, came into force on May 16th. He could give an assurance that there was no case under the Act in which a certified midwife would not be present during the whole time of labour, and that, in addition, a medical man would be notified at the onset of labour and would have to hold himself in readiness to attend the case. They had done their best by subsequent administrative inquiry to meet a point of view strongly stressed by the House during the passage of the Act. Maternal mortality was at present the lowest on record in Scotland. It showed a saving of some 60 lives over the figures of the previous year.

HOSPITALS

The reorganisation of hospitals under the local authorities was proceeding, although perhaps not quite as quickly as they would wish. Some of the large authorities had taken steps for comprehensive schemes under the Act of 1929, and many of them were already bringing their hospital services up to date. A scheme, for instance, which would give Lanarkshire as a whole a new general hospital and a new maternity hospital, as well as improved care of infectious diseases, would be now well on its way; but unfortunately the large burghs did not see eye to eye and would not combine on a joint scheme with the county council. He did not attach blame to either side, but it was desirable that the parties should thrash out their difficulties as soon as possible and get a scheme under way. Provision was being made for a new municipal hospital at Greenock. It was hoped that agreement would be reached by which the hospital would serve Port Glasgow as well, but unfortunately Port Glasgow decided not to participate in the scheme on the ground that they would not have a share in the actual management of the institution. Arrangements were being made in Dumfries and Galloway which he thought were going rather more smoothly than those he had mentioned. There the local authorities were in negotiation with the voluntary hospitals as well, which was very desirable. In the North some six local authorities had jointly agreed to maintain a consulting physician at the Northern Infirmary at Inverness. That was a type of combination which the Committee would welcome very much. Four schemes adopted under Section 27 of the Local Government Act of 1929 covered 800,000 of the people of Scotland, or one-sixth of its population, the authorities in question being Edinburgh, Dundee, Aberdeen, and Bute. Schemes were under discussion for extensions of hospitals at Lerwick, Kirkwall, and Stornoway. In Lerwick, with Treasury approval, the Department of Health had promised the managers of the Gilbert Bain Hospital a grant of 80 per cent. of the estimated cost of a new hospital, which was £45,000. In Kirkwall the Balfour Hospital trustees had submitted to the Department an application for a grant to enable them to extend the hospital at an estimated cost of £10,000 and the Department were giving that question sympathetic consideration. At Stornoway plans had been submitted for the approval of an extension to the Lewis Hospital, and the managers had been promised a grant of £14,000 from the Highlands and Islands Medical Fund, or 80 per cent. of the estimated cost.

NUTRITION AND THE CHILDREN

These particular schemes which the Committee had been considering were, of course, to be built on the broad foundation of the general health of the nation. They had to start with the mother and the newly born infant, and passing on they had to come to the school child, to the adolescent, and finally to the adult. As far as school-children were concerned, one big constructive measure which had been in operation, in addition to the medical inspection of school-children, was the milk-in-schools scheme, which was one of the big practical demonstrations of the Department's interest in nutrition. In certain areas the increase in numbers under the milk scheme had not been what they would wish, and in certain counties and cities there had been a diminution. It was odd to find that in the spring of 1936 in Lanarkshire 67,000 children were having milk in the schools, and that since then the figure had dropped to 35,000. He did not know what the reasons were for the decrease in the number of children taking milk. The decline showed itself in areas where a great quantity of milk was supplied free, as well as in areas where half-price was charged. The position was not satisfactory and required further consideration, but they should not blind themselves to the

fact that in Scotland, where a few years ago practically nobody was taking milk, there were now 294,000 school-children getting a ration of milk every school day. He was certain that this would show itself in an improvement in the health of the children in the schools, and particularly in their dental condition. The dental condition of the people of Scotland was bad, and that of the school-children was unsatisfactory. A supply of mineral salts in the best possible way must show itself in an improvement in the dentition of the child, and ultimately would save an expense which would fall on the local authority or on the individual when in later years his teeth went wrong and led to lasting conditions of ill health. The Committee knew how much the people of Scotland were indebted to Prof. Cathcart and Sir John Orr for their work. Further surveys were being undertaken by these eminent experts, and the northern survey under Sir John Orr was being supplemented by assistance from the Carnegie Trust which would enable the survey to be more thoroughly carried out in Scotland than it had been in any other country. He did not say it would relieve them from the necessity of action when the results came; indeed, it would make it all the more necessary.

Mr. HENDERSON STEWART: Is the Secretary of State satisfied that the investigations will be of such a nature and character as to produce findings which he will be able to regard as final and authoritative?

Mr. ELLIOT said he thought so. The surveys were being carried out in the most careful way with the fullest possible coöperation by all the departments in the Scottish Office. The fullest official assistance would be given to make the investigations authoritative and such as they could act upon. In regard to nutrition, it was worth while remembering how far they had advanced in the health of the school-children in Scotland. As recently as 1901 there were 3700 deaths of school-children between 5 and 14. Last year the figure was about 1500. In 1870 6000 children between 5 and 14 died, and at that period 40 per cent. of the population of Scotland was rural as against 20 per cent. at present. That showed that mere fresh air was not sufficient to produce health. There must be reasonable conditions of sanitation and nutrition as well. The desirability of developing regional water schemes was being recognised more and more by Scottish local authorities. There was a special problem in the Highlands and Islands and the Committee on Scottish Health Services had recommended a special grant for health services and water-supply in those parts of the country.

HOUSING

During the past seventeen years they had built about 250,000 houses, which meant that nearly 1,000,000 people in Scotland had obtained better housing accommodation. But they had another 250,000 houses to build and they could not take seventeen years in building them. They had in front of them the building of two cities the size of Edinburgh and another city of the size of Aberdeen. That was a big task and they would have to bend themselves to it without any sort of party predilections. At present instead of building a new city of Edinburgh with 100,000 houses every four years they were only building one every eight years, and that was not enough. The local authorities were doing their utmost to apply the principles of town planning to the new areas which were being built, in some cases satisfactorily and in other cases he thought not so satisfactorily.

The housing problem in the Special Areas had also been the subject of very careful consideration. The Commissioner for Scotland proposed to convene a meeting of local authorities to consider the possibilities of a housing association on a non-profit making basis for the Scottish Special Areas. If the Commissioner got sufficient assurances of coöperation the association would direct its attention to experiments in alternative methods of construction and would, as far as possible, avoid competition with the authorities in the supply of labour and materials which it was difficult to get at the present time. Apart from the existing State subsidies the Commissioner would provide the funds necessary, so that there would be no cost to the local authorities.

Members' Criticisms

Mr. T. JOHNSTON said that infantile mortality was 30 per cent. worse in Scotland than in England and Wales, and in the chief infectious diseases the figures were 2½-times worse. Sir John Orr had put it on record in the current issue of the National Farmers Union Year Book that: "The next great social reform needed is a food policy to make a diet adequate for health available for every family. This would constitute the greatest social reform of our age, and if it were done on sound lines, it would bring true prosperity to agriculture." The Mellanby experiments had proved beyond all doubt that the dental trouble affecting the population could be entirely eliminated. The Advisory Committee on Nutrition of the Ministry of Health this year stated: "There is no other single measure which would do more to improve the health, development and resistance to disease of the rising generation than a largely increased consumption of safe milk, especially by mothers, children and adolescents." They went on to expand that argument and said that they deplored the fact that there was a deficiency of milk in the diet of large sections of the population. He thought they had now all the reports that they needed; they knew all the facts and what the trouble was. He would like the Government to explain how they could justify a state of affairs in Scotland in which alleged surplus milk was being supplied to butter factories at 4*d*. a gallon while in the distressed areas nursing mothers and children had to pay 2*s*. for it. Under the scheme for supplying milk to schools every child between 5 and 14 during school life got milk at 1*s*. a gallon, whereas in the case of children of four who were not at school 2*s*. a gallon was charged for the milk. It would pay the farmers and pay the nation if a different policy were adopted, and it would certainly pay the public in improved health. Let the medical officer of health in each district issue a certificate to every mother and child who wanted milk, as was now done in Ulster. Those requiring milk could go to the milk shops and get get it on production of these certificates, thus saving distribution charges. They could get the milk now at 1*s*. a gallon in this way. The proposal was perfectly feasible, and it would bring about the greatest revolution in public health that was immediately possible. If the Government did this in the case of milk, there was no reason why they should not develop the same policy with regard to other necessary foodstuffs.

Sir ARCHIBALD SINCLAIR said they had learned authoritatively last year from the report of the Committee on Scottish Health Services that the number of persons awaiting admission to the hospitals of Scotland exceeded the total number of beds available. Progress was rather slow and he hoped that the Secretary of State would press on with this matter as far as he could.

The question of an additional grant-in-aid of the local authorities health services in the Highlands and Islands was an urgent one. To place the whole responsibility for the present deplorable housing situation in Scotland on the shoulders of the present Government, he thought, would be manifestly unfair but they must bear a heavy share of responsibility. The Department of Health in their report for 1936 pointed out that nearly one-quarter of the working-class houses in Scotland were overcrowded; fully one-third of all the houses in Scotland were without a separate water-closet and a still greater number were without baths. They said that overcrowding in Scotland was on the average about six times greater than in England. The number of overcrowded houses belonging to local authorities was over 35,000, representing 22·7 of overcrowding. It was

the duty of the Government to spare no effort to wipe out this blot on the social conditions in Scotland.

Mr. KIRKWOOD said he had just come back from a cruise round the Western Isles and he had found that a great transformation had taken place there for the better, particularly in the health of the children. That was largely due to the medical services in the Highlands and Islands. The doctor in Stornoway had drawn his attention to the fact that the hospital accommodation was inadequate.

Sir MURDOCH MACDONALD, referring to the dental condition of children said that in Glasgow a request was made by the issue of 30,000 odd cards to parents for their opinion as to dental treatment for their children, and it was most unfortunate to have to record that 20 per cent. considered treatment to be unnecessary, and that of the 26 per cent. who promised to attend for private treatment a very large proportion in the following six months were found not to have carried out any treatment of any kind. In the county of Inverness there was an examination for dental treatment but the distances were very great, particularly in the Hebrides and it must be extremely difficult to give even the clinical advice which a dental specialist might give to the children and their parents as to what ought to be done. He hoped that consideration would be given not only to the appointment of an inspector who would advise what ought to be done, but also to the establishment of a clinic. He could not agree with Mr. Johnston that farmers ought to supply milk at a far cheaper rate than they did now. If it was necessary to supply additional milk to children in order to prevent dental caries and other diseases of the teeth, or to cure malnutrition, then the Government must step in.

Mr. LEONARD said dental defects in children were one of the major problems of the school health services, yet there were only 51 full-time dentists engaged in endeavouring to attend to this problem. There were 31 part-time dentists, but that only meant one person attending to 12,000 children. In the opinion of qualified authorities on this subject there should be one dentist to every 5000 children. The question of nursery-schools was also urgent and must be developed quickly. There were only 50 nursery-schools in Scotland attending to 1800 children, of that number 36 were run by voluntary bodies. He would like to know whether anything had been done by the Department to bring to the notice of the competent authorities in Scotland the considered report on the need for the greater coördination and for a general advance in the treatment of tuberculosis.

Mr. BOOTHBY said there was definite malnutrition among a section of the working-class population in Scotland. It was a scandal that that should be so, and he agreed with Mr. Johnston that there was something wrong about a system under which 2*s.* was charged to the working classes for milk while the manufacturer got milk at between 6*d.* and 1*s.* a gallon. Every effort should be made to get milk as cheaply as possible for young children, especially before they went to school, and for nursing mothers in the industrial areas of Scotland. He would rather the Government took over the stuff and distributed it itself in necessitous cases than allow the present conditions to continue. There was a strong case for considering the possibility of getting other articles of food produced in Scotland to the working class more cheaply.

Mr. MACQUISTEN said the housing report showed a very bad state of affairs and it looked as if the local authorities had not the time or the capacity to manage these matters. They had certainly been very dilatory.

Mr. HENDERSON STEWART said he was prepared to assert that in every rural district in Scotland at least 50 per cent. of the houses by every test of hygiene and public health were unfit for human habitation. He begged the Secretary of State to bend his great energy to this problem, even for a little time. As compared with the country folk the townspeople were getting more than their due share of attention.

Mr. ERSKINE HILL said the Government were to be congratulated upon what they had already done in the cause of nutrition. There was far too large a proportion of deaths caused by bronchitis and pneumonia and afflictions of childhood affecting the limbs, and so on, which often led to death in the first year of life. Instruction would be very helpful to enable parents to diagnose and start treatment earlier. One had only to go to an orthopædic hospital to realise what could be done if the various crippling natural ailments of childhood in certain case were attended to at once. He would point out the very rapid decrease in the mortality-rate after the children had gone to school. Between one and five years it was 7·6 per thousand; between five and nine 2·1; and between twelve and fourteen 1·4—a very remarkable fall. One sentence in the report deserved the attention of the Committee: "The need for increased medical supervision of children between the ages of 1 and 5 is considerable." He also thought that medical supervision would be a very great help in the years following 15, particularly in the case of boys.

Mr. PETHICK-LAWRENCE drew attention to the unsatisfactory position of many persons who were seriously blind. He asked the Secretary of State to reinvestigate the standards of blindness and see that opportunity was given to persons who claimed that they were prevented by their infirmity from earning their own living to present their case. If this was true such a standard should be made available that in all these cases they would be classified as blind persons.

Sir R. W. SMITH said that he had been told that in the last few years the tendency of parents to feed their children on tinned food had become much more common. By education and otherwise they ought to emphasise the necessity of mothers feeding not only their children, but also their young people on fresh food. In the report of the Department two medical inspectors of school-children said that malnutrition was not a question of want of food but of the unsuitability of the food provided. In regard to Wigtown the medical officer said that too much starchy food and too much tinned food were one cause of malnutrition.

Mr. WESTWOOD said that the total vote which the Committee was being asked to pass for the health services of Scotland was £3,598,501. Were they getting the full benefit of this expenditure? This money should be directed towards the elimination or reduction of preventable disease. They might spend money on hospitals, medical services, and other health measures, but much if not most of it was spent in remedying the defects resulting from ill-nourished people living in unfit and overcrowded houses.

The Reply

Mr. WEDDERBURN, Under-Secretary of State for Scotland, replying to the debate, said as far as the Department of Health was concerned they had previously drawn the attention of local authorities to the need for providing the fullest supplies of milk in maternity and child-welfare centres and they would probably be issuing before very long another memorandum dealing more comprehensively with this very important subject. He could assure Mr. Kirkwood that the hospital at Stornoway would not be delayed through the pressure of other building work. No one ought to underestimate the urgency of the rural housing problem, but he hoped that there would not be any rivalry in this matter between town and country. Until the passing of the Slum Clearance Act in 1930 only about 11,000 houses had been built for the purpose of replacing unfit dwellings. After the Act was passed the proportion of slum clearance houses gradually increased, and in the four years 1933 to 1936 inclusive no fewer than 43,000 houses had been built in Scotland for the purpose of slum clearance alone, compared with about 19,000 houses

before 1933. While they remembered how much remained to be done they should not underestimate the magnitude of that achievement. It showed a far greater rate of progress than was ever contemplated before on the most pressing and urgent part of the problem. Since then they had had the 1935 overcrowding Act which was intended to be the complement and not the substitute of the slum clearance programme that was already proceeding. They had now more houses under construction than ever before. He thought they could at least take comfort in this, that public opinion in Scotland was fully alive to the urgency of the matter and that they would be able with the coöperation and help of the building trade unions and building employers and local authorities to put an end to conditions which had been intolerable for a long time.

NOTES ON CURRENT TOPICS

Local Government Superannuation Bill

On June 22nd the Local Government Superannuation Bill was considered by a Standing Committee of the House of Commons. Colonel CLIFTON BROWN was in the chair.

On Clause 5 (Power to admit employees of statutory undertakers), Captain ELLISTON moved an amendment enabling a local authority operating the Midwives Act, in arrangement with a voluntary organisation employing whole-time midwives, to admit such midwives to the benefit of the authority's superannuation scheme by agreement in the same way as they could admit employees of statutory undertakings. This was agreed to.

On Clause 8 (Eligibility for superannuation allowance and scale of allowances), Sir T. J. O'CONNOR, Solicitor-General, moved an amehdment providing that an employee of a local authority should be entitled by paying a prescribed sum to convert his non-contributing service into contributing service for the purpose of securing an increased pension of such an amount between so many 120ths and so many 60ths as was appropriate to the payment made. The amendment was agreed to.

On Clause 12 (Reckoning of contributing and non-contributing service and service of persons indirectly employed), an amendment moved by Sir KINGSLEY WOOD was agreed to. It provided that in the case of contributory employees who left the employment of a local authority to serve in the Great War the period in the forces should be taken into account as if it had been a period of service under the Act.

On Clause 16 (Female nurses, midwives, and health visitors), Sir T. J. O'CONNOR moved an amendment to enable local authorities to grant compensatory allowances to nurses, midwives, and health visitors in their service as contributing employees if they had not completed 40 years' service on reaching the age of 60. This was agreed to.

When consideration of the Bill was resumed on June 24th, Sir KINGSLEY WOOD moved a new subsection to Clause 26 (Modification or replacement of local Act superannuation schemes). It empowered the local Act authorities, to whom the clause applied, to include in the scheme which they had to submit under the clause a provision by which they could, if they wished, continue to require employees, or prospective employees, to pass a medical examination before coming into the superannuation scheme, in accordance with the statutory provisions governing the scheme or with their past practice. This was agreed to.

On the question that the second schedule stand part of the Bill, Captain ELLISTON appealed to the Minister to provide interchangeability between the federated superannuation scheme of the voluntary hospitals and the superannuation schemes under this present Bill. He said that there was no doubt that such a provision would do a great deal to promote interchangeability of personnel between the voluntary and municipal hospitals and thereby enhance the quality of hospital work all over the country. The matter was of special importance to nurses.

Sir KINGSLEY WOOD said that there were, he regretted to say, almost insuperable difficulties of a financial and actuarial character in the way of any reciprocal arrangements between municipal superannuation schemes and those of non-statutory bodies like the federated scheme referred to by Captain Elliston under which many nurses were at present insured for pensions. Apart from this difficulty objection might be seriously urged to service in the employment of some body other than a local authority being made redeemable for pension and to the local authority which would become liable to pay the pension being thus made liable to pay for service rendered outside the local government service and under conditions which were not within the control of any local authority. In view of those difficulties he was not able to proceed in the direction which Captain Elliston desired.

The Factories Bill

THIRD READING IN THE COMMONS

On June 22nd the Factories Bill was read a third time in the House of Commons. Sir SAMUEL HOARE, Home Secretary, who moved the third reading, said that the Bill brought within its scope 6,000,000 workers employed in 250,000 undertakings of all sizes and descriptions. It dealt with the health, welfare, and safety of this great and diverse body of workers. In particular it offered protection to women and youthful workers who particularly needed it. The Bill set a minimum standard. It did not impose an ideal, and he hoped that many employers would go beyond the standard which we were setting in it. The Bill definitely raised the general standards all round and in certain respects made improvements that would prove of great importance in the future. Recalling certain of the improvements made by the Bill, the right hon. gentleman said that the provisions for the cleanliness of the workers and the cleanliness of the buildings were being greatly strengthened and extended. Overcrowding was being progressively reduced. Fresh air must henceforth be circulated in every workroom. For the first time in our factories legislation sufficient and suitable lighting must be secured and maintained. This was an improvement of great importance. Very important also was the new provision under which there was to be medical supervision of factory workers in case of industrial illness, and in particular where there might be risk of injury to the health of young persons. As to the safety of workers, for the first time in our history, all new machinery must, when sold or hired, comply with certain safety requirements. As regards old machinery, many improvements were being made for fencing it and ensuring proper precautions. There was also the important provision that young persons were not to work dangerous machines unless they had been fully instructed as to the dangers, and unless they were sufficiently trained and adequately supervised. Many new precautions were being taken against fire risks, such for instance as the provision which extended the need for means of escape to the smaller factories. As to welfare, the Bill greatly widened the scope of former Acts and applied certain welfare provisions generally instead of restricting them to special factories and special classes of factories.

The statutory hours for women and for young persons between 16 and 18 would be reduced from 60 to 48 a week and the hours of young persons between 14 and 16, subject to certain carefully guarded exemptions, would be reduced to 44. Moreover, in the case of women and young persons between 16 and 18 overtime would be greatly reduced. Speaking generally, the maximum of 600 hours a year would be reduced to 100 hours a year. Overtime in future would be restricted to certain weeks in the year and in order that it might be more effectively checked, it would be counted for the factory as a

whole instead of for the individual, and for young persons between 14 and 16 there would be no overtime at all. Women and young persons would henceforth be assured of their Saturday half-holiday, as their work would stop at 1 P.M. instead of 4 P.M. He believed that the Bill would come to be regarded in future as a great measure of social reform. But great as were these individual improvements, the greatest advance in the future would be due to the concentration of public opinion upon these questions as a result of these discussions. He was struck by the series of interesting discussions which took place on the report stage, and in particular, those upon accidents and upon the employment of juveniles. Great good had been done by the concentration of the attention of the House—and as a result, the attention of the country—upon those very urgent questions. He wanted to see a much more alert public opinion upon both those questions. From what little knowledge he had been able to gain about accidents, he thought one of the most urgent needs was that the public generally should pay more attention to them, should be less careless about them, and should take more reasonable precautions. He would like to see compulsory attendance at the Industrial Museum, not only of employers but of householders as well. He was very much struck on a visit to the museum the other day by the extent to which safety appliances had been developed and how cheap in price many of them were. He drew the attention of employers, of householders, and of all ordinary citizens to this museum. He would like to see the public generally realise what is being done and how much more might be done if employers and householders made use of the facilities now at their disposal.

He assured members that when the Bill was passed it would be administered with the sympathy that the factory inspectorate had always shown in the discharge of its duties. It would be administered, perhaps, with even greater efficiency in the future, for they would certainly have to extend substantially the number of the inspectors. It would be administered by the Home Office with the settled conviction that it was a great and useful measure, that it contained within its four corners the seeds of growth, and that the House desired it to be the instrument for generally raising the standard of the conditions in factories and workshops. So far as administration was concerned, the Home Office intended, in the letter and the spirit, to carry out the general wish of all sections of the House.

AN INSTALMENT ONLY

Sir FRANCIS FREMANTLE after congratulating the Chancellor of the Exchequer, the present Home Secretary, and the Under-Secretary on the position which the House had reached in passing the third reading of the Bill, regretted that medical officers of health had so little part to play in this measure of health in the factories.

Some 25 years ago he had suggested that these matters should be taken out of the separate administration of the Home Office and combined in a single Ministry of Health. Since that time the whole fashion of politics had changed and almost a third of the work of that House was dedicated to the improvement of the individual conditions of the people. Both sides of the House now joined together in supporting measures of this sort, but although the degree of advance in this measure was considerable, yet it did not come up to their desires. The improvement of the lighting of factories was an advance of great value, as also the new washing facilities for all workers. The need to secure greater coöperation between the local authorities and the factory inspectorate of the Home Office was partly met by the greater powers now given to district councils. By working in conjunction with local education authorities, it would now be possible to obtain access to the children in the schools, so that school inspection work would result in children being helped to find proper vocations in factories. But a proper liaison was still lacking. He hoped that the change of name from certifying to examining surgeon would mean a change in practice and that more use would be made of those who have local knowledge of the children themselves. He wanted the inspection not simply to be an inspection of factories, but to bring home to individuals the desire of the inspectorate to help them adapt themselves to their work.

There was to be improvement in the hours of working, but he would like to remove entirely the opportunity for overtime employment for women and young persons. This consolidating and coördinating Bill should be looked upon as a means of further advance.

Sir J. HASLAM referred to the magnificent work behind the scenes of the certifying surgeons who had received little mention either in committee or in the House. He hoped the Home Office would encourage them in the good work upon which they were engaged. He wished that both employers and workers could see more of the Industrial Diseases Exhibition in Horseferry-road, London. Could not the exhibition be moved to places like Manchester or Leeds, where millions of workpeople would have an opportunity of seeing it?

On June 23rd the Bill was read a first time in the House of Lords and received a second reading on June 28th, when Viscount Samuel said he hoped that a system might be developed in which the thoughtful workman came to feel himself not a mere subject but a citizen in the world of industry.

Exhibition of Animal Films

On June 23rd the Cinematograph Films (Animals) Bill was considered by a Standing Committee of the House of Commons. The object of the Bill is to prohibit the public exhibition of films in the production of which suffering is caused to animals, or any films which depict the suffering of animals which is brought about by any means, either natural or artificial.

Sir ROBERT GOWER moved an amendment providing that a cinematograph film should be deemed to be exhibited to the public when, and only when, it was exhibited in a place to which for the time being members of the general public as such had access. It was represented to him and to the other promoters of the Bill by members of the medical profession that to-day a number of films showing demonstrations on animals were taken and were used for the purpose of exhibition to medical and other university students. It was much better that use should be made of cinematograph films for this purpose than that the actual animals should be used for demonstrating. The amendment was agreed to and the Bill passed through Committee.

QUESTION TIME

WEDNESDAY, JUNE 23RD

Physical Training in the Territorial Army

Mr. CARTLAND asked the Secretary of State for War when he proposed to reconsider the decision of his department not to grant any assistance towards the encouragement of physical training in the Territorial Army.—Sir LAMBERT WARD, Treasurer of H.M. Household, replied: The regular N.C.O.'s are required to train the Regular Army, but Territorial Army Non-Commissioned Officers are already allowed to train as physical training instructors and get extra pay for so acting. Moreover, physical training instruction counts towards the number of drills required. The decision that assistance additional to the above cannot at present be given will be kept constantly under review.

THURSDAY, JUNE 24TH

Child Adoption

Mr. MATHERS asked the Home Secretary when the report by the committee on child adoption might be expected; and whether there was an early prospect of legislation making it possible for Scottish persons to adopt children domiciled in England, and vice versa.—Sir

SAMUEL HOARE replied: I have just received the report of the Committee on Adoption Societies and Agencies and have given instructions for its presentation to Parliament. While the Adoption of Children Act, 1926, and the Adoption of Children (Scotland) Act, 1930, provide that an adoption order shall not be made in favour of any applicant who is not resident and domiciled in England or Wales, or Scotland respectively, it is not necessary that the infant shall be so domiciled, and the question of legislation on this point, therefore, does not arise.

Air-raid Precautions

Mr. DAVIDSON asked the Home Secretary the total number of gas-mask distributive centres now established and the Home Office estimate of the number still required. —Mr. LLOYD, Under-Secretary, Home Office, replied: Four large regional supply depôts have been established with a total capacity of about 11,000,000 gas masks. Nine other similar depôts remain to be established. The scheme for distribution from these regional depôts is still under consideration and no centres for distribution purposes have yet been set up. No estimate can at present be given of the total number of such centres that will be required.

Diphtheria Prophylactic

Mr. LEACH asked the Minister of Health whether he was aware that an Irish jury attributed a death from generalised tuberculous infection following prophylactic inoculation against diphtheria to the presence of tubercle germs in a bottle of prophylactic supplied by the English firm of chemists who supplied most of the diphtheria prophylactic used by public authorities in England and Wales; and whether he would have a searching inquiry made into this matter in view of the seriousness of the allegation made.—Mr. BERNAYS, Parliamentary Secretary to the Ministry of Health, replied: I have seen a press report to the effect stated in the first part of the question. As to the second part, careful inquiry concerning the prophylactic supplied by the firm referred to has already been made by medical officers of my department and the result leads to the conclusion that no tubercle bacilli were present. As the matter is somewhat technical I will send the hon. Member further particulars.

Dartmoor Prisoner's Removal to Broadmoor

Mr. PRITT asked the Home Secretary whether his attention had been drawn to the case of a prisoner at Dartmoor who had a crippled arm and was certified insane and removed to Broadmoor; whether that prisoner was still at Broadmoor; whether he was now sane, and, if not, from what form of insanity he was suffering; whether his insanity was brought about wholly or partly by his treatment in Dartmoor; whether his arm became crippled as a result of an attack upon him by a prison officer at Dartmoor; and whether any inquiry had been, or would be, held into the circumstances under which his arm was crippled.—Sir SAMUEL HOARE replied: I presume that the case referred to is that of a prisoner named A. H. Jackson who in April of last year sustained a deep cut on his right forearm from broken glass. The circumstances were fully investigated at the time by the Board of Visitors, whose inquiry showed that there was no foundation for the suggestion that he had been attacked by a prison officer. The suggestion that the prisoner subsequently became insane owing to his treatment in prison is equally unfounded. His mental condition has improved, but he is still unfit to leave Broadmoor Asylum. He was suffering from delusional insanity.

MONDAY, JUNE 28TH

Milk in Special Areas

Mr. JAMES GRIFFITHS asked the Minister of Agriculture, whether, in view of the report of the Milk Marketing Board that under the provisions of their cheap milk scheme in the Rhondda the consumption of milk by those benefiting under the scheme increased by 43 per cent., he would take steps to extend the scheme to other areas in Wales.—Mr. MORRISON replied: The schemes for the supply of cheap milk in the Special Areas have been inaugurated for experimental purposes by the Milk Marketing Board, with the coöperation of local distributors and of the local authorities concerned, and with financial assistance from the Commissioner for the Special Areas. I understand that the Board are of opinion that fuller information as to the working of the present schemes is desirable before any question of further action along these lines could be considered.

Scarcity of Milk in Devon

Mr. DREWE asked the Parliamentary Secretary to the Board of Education whether he was aware that there are 165 schools in Devonshire, with 3731 children, where no supply of fresh milk was available; that difficulty was being experienced in obtaining supplies owing to the low price that the producer received; and what action he proposed to take in this matter.—Mr. KENNETH LINDSAY replied: It appears from the returns from the Devon schools showing the position on March 31st, 1937, that of the 514 public elementary school departments in the administrative county there were 113 departments, containing 4543 children, in which no fresh milk was provided. In 19 of these departments, containing 756 children, various forms of dried milk were provided. In about 87 of the 401 departments where fresh milk was available it was provided outside the milk-in-schools scheme at the ordinary retail price. I am aware that difficulty is being experienced in obtaining supplies of milk in this and certain other rural areas because the suppliers claim that the distribution allowance under the milk-in-schools scheme is insufficient. The future of this scheme is one of the questions which falls for consideration in connexion with long term milk policy, a matter to which the Government are giving close attention, and in this connexion the difficulty to which my hon. friend refers will not be overlooked.

TUESDAY, JUNE 29TH

Teaching of Dietetics in Schools

Mr. HEPWORTH asked the Parliamentary Secretary to the Board of Education what steps were taken to teach practical dietetics in schools, with special reference to the value of body building foods.—Mr. KENNETH LINDSAY replied: Cookery is a regular subject in the education of the older girls in public elementary schools; and the curriculum generally includes such instruction and training in the principles of proper dieting and their application as are suitable for girls at the age of 12–14 years. Some 90 per cent. of all the older girls attending the elementary schools, and rather more than 80 per cent. of the girls educated in secondary schools, are attending schools in which such instruction is provided.

Temporary State Employees and Superannuation

Mr. LAWSON asked the Secretary to the Treasury whether, in view of the fact that the Government had, in the Local Government Superannuation Bill now before the House, accepted the principle of conferring superannuation benefits on temporary whole-time officers, the Government would apply the same principle to the Civil Service and other temporary State employees.—Col. COLVILLE, Financial Secretary to the Treasury, replied: The Bill in question applies only to a minority of employees of local authorities. In the interests of interchangeability and mobility of these staffs, the Bill is intended to secure, so far as this minority is concerned, the uniform application of contributory pension schemes by many hundreds of different authorities. This consideration prevents a distinction being drawn between temporary and permanent officers in the service of local authorities, but the inclusion of certain temporary officers on that account is no reason for modifying the State system, which is non-contributory and differs in many other respects from the local government system.

NEW HOSPITAL AT LEICESTER.—It has now been decided to erect a new hospital here to deal with acute and general cases, and to convert the existing institution into a home for aged and chronic cases. It had formerly been intended to erect a hospital for chronic cases and add to the present general hospital.

HEALTH, HOSPITALS, AND THE STATE

SIR FARQUHAR BUZZARD'S ADDRESS *

THERE are few tasks in life so pleasant as that of distributing prizes without the responsibility of allotting them and without the expense of providing them. It is a particularly gratifying experience to do so in one's own professional home, for that is how I still look upon St. Thomas's even after ten years of exile.

Napoleon—who knew something about conquests—said that the only conquests which were never regretted were those over ignorance, and those of you who have received prizes to-day may be sure that you will never regret the time and energy you have spent in attaining victory. Whether the ignorance conquered was your own or that of the examiners is a question I must leave you to settle between yourselves. In any case I feel confident that there are no regrets on either side and that you prize-winners are on the threshold of many more conquests over ignorance in the future.

It is customary on these occasions for the individual who occupies my position to distribute not only prizes but some words of wisdom, gained from long experience, to those among his audience who are entering upon a career in medicine. I shall not attempt such folly partly because I have little liking for unsolicited advice myself but chiefly because I am convinced that the problems which confront one generation are often entirely different from those which confront the next.

On the other hand, I might, without wasting too much of your time, refer briefly to the great changes which are taking place in the practice of medicine as they affect the individual practitioner, the hospitals, and the community at large. The first question which naturally occurs to one is: "Why are great changes taking place?" There are many answers to that question, but one is outstanding and predominant. The enormous increments of knowledge in relation to health and disease, prevention and cure, during the last fifty years necessitate great increases in the expenditure of both time and money if those increments are to be used in the interests of humanity.

In the last fifty years we have come to recognise the indisputable fact that the more a doctor knows of medicine the more time and money does he need in order to implement his knowledge and do justice to his patients. In the same period of time we have all become more and more convinced that the preservation of health and the prevention of disease are gradually becoming more important than curative methods in the services which we can render to the community. It is the recognition of these truths that is causing widespread changes. The State has recognised them and has authorised local authorities to do something about it. The profession has come to the same conclusion and is constantly adding to the number of special branches of work open to its members. It was inevitable, perhaps, that in the haste to meet new requirements and new developments there has been extravagance, that there has been an attempt to impose on old methods of practice innumerable extra duties and responsibilities with little or no consideration given to economy of time or money.

And now, if I am not mistaken, the time has come when the practice of the profession and of the hospitals have to be reviewed and perhaps revised, when every effort must be made to coördinate activities, to effect economies, and to promote efficiency in the services which they give to the public. The day has passed when a medical man can work as an isolated individual. It is true that he can often obtain the help he needs by hook or by crook, by favour or by bribery, but those are wasteful and thoroughly unsatisfactory methods. He must be able to call for all he needs for his patients by right, the right of an individual who belongs to an efficient organisation carried on for that very purpose.

The generation to which I belong may be content to carry on as they have done in the past for a few more years. The new generation now entering the profession will not be so content. They will demand their right to skilled help and expensive investigations and their demands must and will be met before the world is very much older. There must be a large readjustment of the privileges, duties, and responsibilities of all concerned in the medical service of the future.

But this is neither the time nor the place to discuss in detail the gigantic questions which have to be faced. May I say just a few words on the subject of great and old voluntary hospitals such as our own. The treasurer will forgive me if any of my suggestions or prophecies appear to be too revolutionary or too impracticable. The hospital must become a centre of a large health service and, in doing so, will necessarily extend very considerably its field of action and its executive powers within that field. It must draw into the service which it provides large numbers of doctors in general practice and give them a real share in the activities of that service both in and outside the walls of the institution. I foresee, I am anxious to see, but I shall not live long enough to see, a great increase in your staff. You will have to face determined opposition to every movement in that direction; but that opposition will only come from those who fear competition and can be disregarded. On the other hand, you will have to give an increasing amount of financial help to half-time members of your staff and if you cannot find the money to do this from your own funds, you will have to invoke the help of local authorities.

The chief enemy to efficient practice in medicine is the necessity of working against time, and a doctor in a hurry is a menace to his patients. Long experience of hospital practice convinces me that most institutions of the kind are understaffed and that doubling the number of the staff would promote increased efficiency. A general adoption of this policy would do much to raise the general standard of practice in the community at large, because each individual member of the profession who spends some part of his time working in a public institution, where he is exposed to the criticism of his colleagues and of his students, cannot fail to benefit by the experience.

If I have any excuse for venturing to sketch in the field of hospital policy, a field which is bristling with difficulties for those who are responsible for its fertility, it is my fear lest the voluntary hospital system be imperilled by too close attachment to the great tradition of a great past and by a reluctance to coöperate with the State, while there is the opportunity, in building up a new organisation of medical services based on the central foundations of institutions such as ours.

After all, the difficulties are there only to be surmounted and the greatest tradition is the capacity to progress with the times.

* Abridged from the address delivered at the distribution of prizes at St. Thomas's Hospital Medical School on June 29th.

OBITUARY

JOHN RESTARICK ROLSTON, M.R.C.S. Eng., L.R.C.P. Edin.

Mr. Rolston, who died on June 16th in his eightieth year, had recently retired from practice as ophthalmic surgeon in Plymouth. The son of John Rolston, M.D. Edin., of Stoke, Devonport, he was educated at the Nelson House School and began his clinical study at the Royal Albert Hospital, going on to Guy's Hospital from which he qualified in 1879. He was clinical assistant at the Evelina Hospital for Children and then returned to Devonport as house surgeon and soon assistant surgeon to the Royal Albert Hospital. After a few years in general practice he preferred to limit his practice to ophthalmology and was appointed ophthalmic surgeon to the Royal Eye Infirmary at Plymouth and to the Prince of Wales's Hospital in Greenbank-road, visiting also the Liskeard Hospital, the Plymouth Garrison, and the Royal Dockyard Asylum. At this time he contributed clinical notes on interesting cases and technical improvements to the medical press. Alongside his medical work he was interested in military training, serving in the old 2nd volunteer battalion, Devon regiment, with the rank of major commanding the Devonport detachment. He married a daughter of Dr. S. E. Comyn who survives him with their only son, Lieut.-Colonel A. C. Rolston, who commands the Devon and Cornwall fortress, R.E.

AUGUST WIMMER

Prof. Wimmer, who died on May 20th, was born in 1872 in Denmark, where he spent most of his life when not studying psychiatry and neurology abroad. He was in charge of the Copenhagen municipal asylum of St. Hans from 1912 to 1919, and was responsible for the great structural and administrative changes made in it in this period. He was appointed professor of psychiatry in Copenhagen in 1920, and was put in charge of the psychiatric clinic of the Rigshospital in 1933. The subjects with which his name is often associated are paranoia, degeneracy in children, psychogenic mental disease, and psychiatric and neurological methods of examination. In 1929 he published a well-known work on chronic epidemic encephalitis, and a large text-book on psychiatry appeared in 1936. Many of his works were published in English, but France was his spiritual home. His energy was as great as his constitution was seemingly frail, and he had accumulated an encyclopædic knowledge of the subjects connected with his work.

MEDICAL NEWS

University of Oxford

At recent examinations the following candidates were successful :—

M.CH.

M. W. C. Oldfield.

FINAL EXAMINATION FOR B.M., B.CH.

A. J. M. T. Barnes, R. Billig, R. G. Blackledge, W. W. Coppinger, D. I. Crowther, A. C. Grey, G. F. C. Hawkins, M. H. Hughes, D. Jefferiss, J. Mason, R. B. Niven, A. R. Norton, M. A. Partridge, I. F. Rose, J. M. Sherring, A. F. Smith, T. B. Snell, R. H. S. Thompson, B. M. Thornton, C. B. I. Willey, W. Wynne Willson, A. L. Young, and W. B. Young.

D.O.

C. A. Buchanan, M. M. A. Dubash, V. B. Mankad, J. D. Maude, Y. K. C. Pandit, M. J. Philip, E. V. W. Pockley, L. R. C. Rose, and C. A. Stanley.

In a congregation held on June 24th the degree of bachelor of medicine was conferred upon N. H. Martin.

University of Cambridge

At recent examinations the following candidates were successful :—

THIRD EXAMINATION FOR M.B., B.CHIR.

Part I, Surgery, Midwifery, and Gynæcology.—E. W. O. Adkins, G. E. Adkins, R. F. Ashwin, T. M. Banham, C. F. Barwell, P. F. Barwood, R. D. D. Birdwood, A. W. Box, E. E. Bullock, J. F. H. Bulman, G. A. Burfield, O. J. Curl, J. K. Denham, R. C. S. Dick, H. G. Dowler, H. L. Ellis, T. J. Fairbank, A. L. Fawdry, N. Feiwel, A. Garcés, E. A. G. Goldie, A. C. F. Green, J. L. Griffith, J. E. Hardwick-Smith, S. W. G. Hargrove, N. J. P. Hewlings, J. H. S. Hopkins, R. T. Johnson, J. S. Joly, H. S. Kellett, P. Kelly, A. Leese, P. F. Malim, R. W. Mason, J. H. Moir, W. E. D. Moore, K. S. Mullard, W. A. Nicholson, A. P. Norman, W. E. Owens, G. R. C. Peatfield, P. A. T. Phibbs, E. H. D. Phillips, C. G. Rob, D. Rubin, G. Sheers, J. F. Stokes, D. C. Sturdy, V. E. A. Sykes, D. J. D. Torrens, R. L. Townsend, S. C. Truelove, W. B. Waterfall, P. H. Willcox, J. M. G. Wilson, P. R. Wilson, D. E. Yarrow, and M. D. Young.

Part II, Physic, Pathology, and Pharmacology.—C. D. Anderson, R. A. Andrews, R. F. Ashwin, E. F. Aubert, J. L. W. Ball, T. M. Banham, R. C. B. Barbor, P. F. Barwood, M. B. Billington I. G. Braddon, H. A. Brook, J. F. H. Bulman, C. T. A. Burgess, G. M. S. Caldwell, L. H. Cane, A. C. Clark, N. F. Coghill, J. O. Collin, F. S. Cosh, F. M. Crawshaw, A. C. Cunliffe, R. C. S. Dick, C. M. Dickins, H. G. Dowler, R. Edwards, W. H. Ekin, E. A. Evans, E. M. Evans, N. Feiwel, J. N. Fell, C. H. C. Ferguson, G. M. Fleming, E. B. French, J. C. Gilson, C. E. D. H. Goodhart, I. C. A. D. P. Graham, I. A. Guest, H. Haigh, S. G. Hamilton, J. N. Horne, W. H. R. Jeremy, J. S. Joly, P. Kidd, A. B. Lintott, T. P. H. McKelvey, R. W. Markham, J. H. Moir, B. D. Molesworth, C. R. Morison, W. G. Murray-Browne, T. P. Myles, R. C. Neville, L. B. Paling, A. K. Pardhy, M. T. Parker, E. A. Pask, C. E. Peaker, J. P. Reidy, G. O. Richardson, C. G. Scorer, C. J. S. Sergel, K. M. M. Sheldon, J. P. Singer, R. M. Solomon, R. S. Stevens, A. W. Stewart, J. F. Stokes, R. F. Tredgold, W. B. Waterfall, R. W. Watts, D. O. Wharton, B. D. Whitworth, E. H. L. Wigram, L. A. C. Wood, H. R. Wynne, and G. E. Yardley.

University of London

Sir Robert Pickard, F.R.S., director of the British Cotton Industry Research Association and a member of the Senate since 1926 has been elected vice-chancellor for the remainder of this year and for next year in place of Mr. H. L. Eason, who is taking up his duties as principal on July 1st. Prof. J. C. Philip, F.R.S., has been appointed deputy vice-chancellor for next year. Sir Ernest Graham-Little, M.P., has been re-elected a member of the court of the University for a further term of five years from October, 1937.

Dr. A. A. Miles has been appointed to the university chair of bacteriology tenable at the University College Hospital medical school. Since 1934 he has been university reader in bacteriology at the British Postgraduate Medical School.

Dr. Miles is 33 years of age. He was elected to an exhibition in natural sciences at King's College, Cambridge, in 1921, and completed his medical education at St. Bartholomew's Hospital. He graduated M.B. in 1928 and held the appointments of house physician to the medical unit at the hospital and casualty physician in the out-patient department. In the following year he became M.R.C.P. Lond. and was appointed a demonstrator of bacteriology at the London School of Hygiene and Tropical Medicine. In 1931 he became university demonstrator in the department of pathology at Cambridge and director of medical studies at Christ's College. In 1934 he was given his present appointment and this year he was elected F.R.C.P. Dr. Miles's published work is chiefly on the brucella group of organisms.

Prof. J. H. Dible, who has held the George Holt chair of pathology in the University of Liverpool since 1929, has been appointed to the university chair of pathology tenable at the British Postgraduate Medical School.

Prof. Dible is 47 years of age and graduated M.B. with honours in the University of Glasgow in 1912. After holding resident posts at the Western and Royal Infirmaries of Glasgow he became demonstrator of pathology in the University of Sheffield in 1913. During the war he served first as a regimental medical officer, and later as a pathological specialist was in command of a mobile laboratory in France and Italy. Prof. Dible returned to take up a senior lectureship in pathology in the University of Manchester, acting also as assistant pathologist to the Royal Infirmary; in 1921 he was appointed to the newly created lectureship in bacteriology. In 1925 he was made professor of pathology in the University of London, at the London (R.F.H.) School of Medicine for Women, and three years later went to Cardiff as professor of pathology and bacteriology in the Welsh National School of Medicine. In 1929 he

received his present appointment and was elected F.R.C.P. Lond. Prof. Dible is the author of "Recent Advances in Bacteriology" and the article on bowel streptococci in the Medical Research Council's "System of Bacteriology." His publications in general and special medical journals include articles on bacteriology, morbid anatomy, and experimental pathology.

Prof. L. S. Dudgeon has been appointed a representative of the general medical schools on the senate for the remainder of the period 1934–38.

Society of Apothecaries of London

At recent examinations the following candidates were successful:—

Surgery.—W. D. Brinton, University of Oxford and Guy's Hosp.; O. D. Gilmore, Westminster Hosp.; F. H. Holder, University of Manchester and West London Hosp.; and R. Robins-Browne, London Hosp.

Medicine.—J. R. Audy, Guy's Hosp.; G. R. Hopper, University of Liverpool; and R. Robins-Browne, London Hosp.

Forensic Medicine.—J. R. Audy, Guy's Hosp.; and R. Robins-Browne, London Hosp.

Midwifery.—J. B. Alexander, University of Cambridge and Westminster Hosp.; B. M. Hulse, Welsh National School of Medicine; L. de C. Kite, University of Glasgow; H. A. N. Passmore, Charing Cross Hosp.; and G. G. Sahasrabuddhe, University of Bombay and West London Hosp.

The following candidates, having completed the final examination, have been granted the diploma of the society entitling them to practise medicine, surgery, and midwifery: J. R. Audy, G. R. Hopper, R. Robins-Browne, and G. G. Sahasrabuddhe.

University of Glasgow

On June 25th the following degrees were conferred:—

M.D.—E. D. Cooper (with honours); Samuel Lazarus (with high commendation); and Andrew Dick.
Ph.D.—Dawood Matta (in absentia).
M.B., Ch.B.—A. M. Thomson.

University of Manchester

Mr. Frederic Wood Jones, F.R.S., professor of anatomy in the University of Melbourne has accepted an invitation to the chair of anatomy in succession to Prof. J. B. S. Stopford, F.R.S., who asked to be relieved of it in view of the increasing responsibilities of his administrative work as vice-chancellor. Prof. Wood Jones will take up his duties in January, 1938.

Prof. Wood Jones graduated B.Sc. in the University of London in 1903 and M.B., B.S. in 1904. He became demonstrator in anatomy at the London and St. Thomas's Hospitals, and then lecturer in anatomy in the University of Manchester. In 1910 he was made D.Sc. Lond. (in zoology), and was appointed to the chair of anatomy at the London (R.F.H.) School of Medicine for Women. He accepted in 1918 an invitation to the chair of anatomy at Adelaide, which he resigned on his appointment to the Rockefeller chair of physical anthropology in the University of Hawaii in 1927. He was elected F.R.S. in 1925 and F.R.C.S. in 1930, when he left Hawaii to become professor of anatomy at Melbourne. Prof. Wood Jones has delivered several Arris and Gale lectures to the Royal College of Surgeons of England and has done original work in anthropology and archæology. His publications include books on corals, arboreal man, the mammals of South Australia, and sea birds, as well as a number of papers on human and comparative anatomy.

Survival of Animals at Low Atmospheric Pressures

The Soviet Union Year Book Press Service issues particulars of experiments lately carried out by the Central Laboratory of Aviation Medicine in which animals were subjected to varying atmospheric conditions. At a pressure corresponding to altitudes of 5000 to 7000 metres, carrier pigeons showed symptoms of altitude sickness with hiccup and vomiting. Dogs, cats, and rabbits died at altitudes of 10,000 to 12,000 metres, while tortoises and guinea-pigs could withstand an altitude of 13,000 metres. Further experiments showed that no full-grown animal could survive at altitudes higher than this; but quite unexpected results were obtained in tests on newly-born mice and rats, which were found to survive at an atmospheric pressure of less than one millimetre—corresponding to a height of 50,000 metres. The animals apparently achieved this by a drop in the temperature of their bodies, and it is stated that in some cases the temperature fell to 0° C. The normal temperature of the human blood is about 38° C., and at an altitude of 20,000 metres blood would boil at this temperature. The fall in temperature of the young rats is regarded by Prof. Streltsov as a protective reaction.

Royal Society of Tropical Medicine and Hygiene

The Chalmers gold medal of this society, awarded for research in tropical medicine, has been awarded to Dr. R. M. Gordon, professor of tropical diseases of Africa in the University of Liverpool.

New Health Clinic at Glasgow

A new clinic in Florence-street, Gorbals, was opened on June 16th. It is the second of a series of large combined health centres to be erected by the Glasgow corporation. The cost of the clinic was £30,000.

Tuberculosis Conference in Paris

The Tuberculosis Association will meet in Paris from Oct. 14th to 16th under the auspices of the French Ministry of Health. Visits will be paid to the Hôpital Laennec, the Dispensaire Léon Bourgeois, the Institut Pasteur, the open-air school at Suresnes, the offices of the Assurances Sociales, and to the École de Puériculture. There will also be a discussion on thoracic surgery. Further information may be had from Dr. Frederick Heaf, hon. secretary of the association, Manson House, 26, Portland-place, London, W.1.

Westminster Hospital

On June 24th the portrait of the late Sir John Wolfe Barry, by Hubert Herkomer, was hung in the board room of this hospital, to take its place among the other portraits of past physicians, surgeons, and chairmen. Sir John was a vice-president and chairman of the house committee from 1898 to 1918, and his second son, the late Mr. K. A. Wolfe Barry, was chairman of the house committee from 1929 till his death last year.

Mr. Bernard Docker, chairman of the hospital, has invited several members of the rebuilding committee to join him in a visit to some of the Baltic countries where they will inspect various of the latest hospitals and hear about plans for those under construction. The party, which will include Mr. E. Rock Carling, senior surgeon, and Mr. C. M. Power, secretary of the hospital, will travel on Mr. Docker's motor yacht, and will go to Helsingfors, Tallinr, Danzig, Copenhagen, and probably other cities.

Medical Research Council

Mr. W. M. Goodenough, vice-chairman of Barclays Bank, has been appointed treasurer of the Council on the retirement of Lord Mildmay of Flete.

The Council invite applications for a second series of post-graduate studentships and research fellowships in clinical science and experimental pathology which are intended to encourage young British medical graduates of special ability and original mind to become investigators in branches of medical science which are concerned directly with disease as it occurs in human beings. This field of research includes investigations into disease or manifestations of disease in patients, together with experimental work of an immediately relevant kind. Six *post-graduate studentships* are offered for medical graduates who have already held house appointments and are strongly inclined to a career in clinical science or experimental pathology. Each selected student will receive an inclusive grant at the rate of £200 per annum, during a period not exceeding twelve months, for personal maintenance while undertaking approved courses of study in this country to advance his training in methods of research. This study may include modern languages and advanced physiological, pathological, and special clinical work under recognised teachers; but the course may not include studies of which the purpose is to enable the student to pass further examinations.

The Council also offer four *research fellowships* for candidates of similar qualifications who have already had some experience in the use of research methods. Each fellowship will be tenable for one year at the ordinary value of £250 per annum, and will be renewable in approved instances at the rate of £300 per annum for a second year. These fellowships are intended as probationary appointments for research in clinical science or experimental pathology under suitable direction in this country. Research expenses may be provided in addition to stipend.

Applications should be sent to the secretary of the Council, 38, Old Queen-street, London, S.W.1, before Oct. 1st.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, July 6th.—5 P.M. Annual meeting of the Society.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.
WEDNESDAY, July 7th.—2 P.M. (County Buildings, Ayr), Dr. Douglas McRae: Some Observations on the Care of the Insane (presidential address).
THURSDAY.—10 A.M., Dr. A. Meyer, Prof. F. L. Golla, Dr. F. A. Pickworth, and Dr. A. C. P. Campbell: The Physiology and Pathology of the Cerebral Circulation.
FRIDAY.—10 A.M., Dr. W. Mayer-Gross, Dr. E. Guttmann, Dr. A. M. Wyllie, Dr. E. Krapf, and Dr. I. Mackenzie: The Symptomatology of Vascular Diseases in the Psychoses and Mental Deficiency. Noon, Dr. K. Paddle: The Prophylaxis of Dysentery in Mental Defectives.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

OXFORD OPHTHALMOLOGICAL CONGRESS.
THURSDAY, July 8th.—10 A.M. (Department of Human Anatomy, University Museum), Mr. N. Bishop Harman and Mr. Arnold Sorsby: Problem of Myopia. Mr. T. Harrison Butler: Lenticonus Posterior and Allied Anomalies at the Posterior Pole. 2.30 P.M., Group-Capt. W. Guilfoyle: Experiences of a Uniocular Pilot of Aircraft. Wing-Comdr. P. C. Livingston: Debatable Ground in the Matter of the Monocular and Uniocular Pilot of Aircraft. Mr. Bernard Chavasse: The Transconjunctival Approach to the Inferior Oblique.
FRIDAY.—10 A.M., Sir Walter Langdon-Brown: Hormones and Vitamins in Ophthalmology. Dr. Arthur J. Bedell: Photographs of the Fundus in Colour. Dr. R. C. J. Meyer will read the late Dr. David James Wood's Doyne lecture on Night-blindness in Eye Disease—Suggestions and Speculations. 2.30 P.M., Prof. Joseph Imre: Plastic Surgery of the Eyelids, Dr. Joseph Dallos: The Individual Fitting of Contact Glasses. Mr. J. W. Tudor Thomas: The Technique of Corneal Transplantation, with Recent Modifications.
SATURDAY.—Dr. Bernard Samuels: The Histopathology of Papillœdema. Mr. E. F. King: The Classification of the Ocular Melanomata. Dr. D. V. Giri: A New Method of Advancement with a Single One-armed Suture.

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.
WEDNESDAY, July 7th.—Noon, clinical and pathological conference (medical). 3 P.M., clinical and pathological conference (surgical).
THURSDAY.—2.15 P.M. Dr. Duncan White: Radiological Demonstration. 3 P.M., operative obstetrics.
FRIDAY.—3 P.M., clinical and pathological conference (obstetrics and gynæcology).
Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics and operations, obstetrical and gynæcological clinics and operations, refresher course for general practitioners.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, July 5th, to SUNDAY, July 11th.—ST. MARK'S HOSPITAL, City-road, E.C. All-day course in proctology.—MILLER GENERAL HOSPITAL, Greenwich-road, S.E. Sat. and Sun., course in general medicine and surgery.—Open only to members of the Fellowship.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.
WEDNESDAY, July 7th.—4 P.M. (St. James' Hospital, Ouseley-road, S.W.), Dr. W. E. Lloyd: Nephritis.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, July 8th.—2 P.M., Dr. Wilfrid Sheldon: Some Defects and Deformities of the Bones. 3 P.M., Mr. A. Simpson-Smith: Peritonitis.
Out-patient clinics daily at 10 A.M., and ward visits at 2 P.M.

Appointments

BASTOW, JOHN, M.D. Melb., F.R.C.S. Eng., has been appointed Hon. Assistant to the Fracture Service at the Royal United Hospital, Bath.
BROOK, S. G., B.Chir. Camb., Resident Medical Officer at the City of London Maternity Hospital.
CLEGG, J. L., M.D. Liverp., D.P.H., D.P.M., Deputy Medical Superintendent at the Worcestershire Mental Hospital, Bromsgrove.
COLTART, W. D., M.B. Lond., F.R.C.S. Eng., Hon. Orthopædic Surgeon to the East Ham Memorial Hospital.
GALBRAITH, A. J., M.D. Edin., D.P.M. Second Assistant Medical Officer at West Park Hospital (L.C.C.).
HARRY, NANSI E., M.B. Wales, Junior Assistant in the Medical Unit of the Welsh National School of Medicine.
KELLERMAN, FRANZ, M.D. Vienna, L.R.C.P. Edin., Junior Assistant in the Medical Unit of the Welsh National School of Medicine.
LAW, BEATRIX B., M.D. Oxon., D.O., Second Hon. Ophthalmic Surgeon to the Royal Infirmary, Aberdeen.
MELLER, H. K., M.B. Camb., Assistant Resident Medical Officer at the City of London Maternity Hospital.
MORLAND, A. J., M.D., M.R.C.P., Hon. Assistant Physician to University College Hospital.
ROBERTSON, HELEN J. L., M.B. St. And., Senior Medical Officer to Out-patient Department, Royal Manchester Children's Hospital, Pendlebury.
STRAKER, EDITH A., M.B. Lond., D.P.H., Assistant in Bacteriology in the Department of Pathology of the British Post-graduate Medical School.
TOUGH, J. S., M.B. Edin., Surgical Registrar to the Royal Infirmary, Aberdeen.
WESSON, A. S., M.D., M.R.C.P., F.R.C.S., Hon. Physician in Charge of the Department of Physio-therapy at University College Hospital.
WILLIAMSON, GEOFFREY, M.B. Manch., D P M., Assistant Medical Officer at the County Mental Hospital, Rainhill, near Liverpool.
Withington Hospital, Manchester.—The following appointments are announced:—
SNAITH, L. M., Ch.M. Durh., F.R.C.S. Eng., Resident Obstetrical Officer;
HERD, J. A., M.B. Manch., Resident Assistant Medical Officer (Grade 3); and
ABELSON, S. G., M.B. Manch., Resident Assistant Medical Officer (Grade 3).
Certifying Surgeons under the Factory and Workshop Acts: Dr. E. CAY (Old Meldrum District, Aberdeen); Dr. H. W. W. GOOD (Shanklin District, Isle of Wight); Dr. T. GILCHRIST (Whitburn District, West Lothian); and Dr. H. W. WYKES (Quorn District, Leicester).

Births, Marriages, and Deaths

BIRTHS

BERKLEY.—On June 23rd, at Leigh, near Tonbridge, Kent, the wife of Dr. E. A. R. Berkley, of a son.
COLE.—On June 21st, in Edinburgh, to Dr. Winifred Cole, wife of Lieut.-Colonel Brian Cole, Jaipur, Rajputana—a daughter.
DAVIES-JONES.—On June 25th, at "The Fielding Johnson" Private Hospital, the wife of Dr. Cyril Davies-Jones, of Leicester, of a son.
FAUX.—On June 20th, at Bolton, the wife of F. Reginald Faux, M.B., Ch.B., of a son.
FLOOD.—On June 24th, at Bullingham Mansions, W., the wife of Dr. Phillip Flood, of a daughter.
GELDARD.—On June 25th, at Sheringham, the wife of Dr. Colin Geldard, of a daughter.
HILTON.—On June 23rd, at Harley-street, to Dr. Gwen Hilton, wife of Dr. Reginald Hilton,—a daughter.
JAMES.—On June 21st, at Stoke Bishop, Bristol, the wife of Dr. John Angell James, of a daughter.
MAGNUS.—On June 24th, at Devonshire-place, W., the wife of Dr. H. A. Magnus, of a son.
NORTHFIELD.—On June 25th, at Devonshire-place, W., the wife of Mr. D. W. C. Northfield, F.R.C.S. Eng., of a daughter.
STERN.—On June 27th, at Devonshire-place, the wife of Mr. David Stern, F.R.C.S. Eng., of Twickenham, of a daughter.
THOMAS.—On June 19th, at King's College Hospital, the wife of Dr. R. Thomas, of Ripon, Yorks, of a daughter.

MARRIAGES

HOLMES—CHAPMAN.—On June 22nd, at St. Mary the Virgin, Monken Hadley, Stanley Wilson Holmes, M.B., F.R.C.S., to Isabel Chapman, S.R.N.
IRVING—O'CONNOR.—On June 23rd, at St. Mary Abbot's Church, James Tutin Irving, M.D., of the Rowett Institute, Aberdeen, to Janet May O'Connor, of New York City.
MCELWEE—OCKLESTON.—On June 19th, at Holy Trinity Church, Trefnant, Frederick Campbell McElwee, M.B., to Miss Dorothy Elizabeth Ockleston, of Trefnant, Denbighshire.
PRATT—SPITTA.—On June 24th, at St. George's, Hanover-square, W., Ernest Perceval Pratt, M.D., to Diana Camilla Dacre, only daughter of Dr. and Mrs. Harold Spitta, of Mayfair, W.
VERE NICOLL—FROHOCK.—On June 26th, at St. Lawrence Church, Surfleet, Lincolnshire, John Alexander Vere Nicoll, M.R.C.S., to Margaret Mary Frohock, elder daughter of Mr. and Mrs. E. J. Frohock, of Surfleet.

DEATHS

BISHOP.—On June 22nd, at Montagu Mews South, W., Frederick Michael Bishop, M.R.C.S. Eng.
HINE.—On June 26th, at Harpenden, Alfred Leonard Hine, M.R.C.S. Eng., L.S.A., aged 84.
LAWSON-WILLIAMS.—On June 24th, at Eastbourne, James Lawson-Williams, M.D. Edin., aged 75.
TENNANT.—On June 23rd, at Stamford, Lincs. John Tennant, M.D., F.R.C.S. Edin., formerly of St. Annes-on-Sea and Belfast.
THOMPSON.—On June 22nd, at Suva, Fiji, the result of an accident, Charles Henry Burton Thompson, M.R.C.S. Eng., D.P.H. St. And., D.T.M. Liverp., M.O.H. and Port Health Officer, Suva, son of the late Henry Thompson, Surgeon, of Hull.
WATKIN.—On June 20th, at Plaistow, E., Paul Ieuan Watkin, M.A. Oxon., M.R.C.S. Eng., aged 59.
WILSON.—On June 25th, at Cheadle, Cheshire, Henry Wilson, J.P., M.R.C.S. Eng., in his 79th year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

THE DOCTOR IN POLITICS AND DIPLOMACY *

BY SIR ARTHUR MACNALTY, K.C.B., M.D., F.R.C.P.
FELLOW OF UNIVERSITY COLLEGE, LONDON; CHIEF MEDICAL OFFICER OF THE MINISTRY OF HEALTH

THE DOCTOR AS AMBASSADOR

Thackeray says of the physician: "He has to wear the inspiriting smile, to breathe the gentle joke, to console, to whisper hope, to administer remedy." The successful practitioner has to cultivate the arts of diplomacy and not infrequently, as representative of his sovereign, he has extended his talents in this direction beyond the radius of the sickroom. Several rulers of Russia requested from time to time the services of English physicians who acted also as unofficial envoys of the British Government. Of these the most famous was THOMAS DIMSDALE, M.D. Aberdeen, F.R.S., who went to St. Petersburg in 1768 at the request of the Empress Catherine. His successful inoculation against small-pox of the Empress, herself, and of her son was rewarded with the rank of baron of the Empire, Counsellor of State, and physician to the Empress, besides a pension of £500 per annum and a present of £12,000.

The first medical ambassador appears to have been Sir THOMAS ELYOT (?1490–1546) traditionally an M.D. of Oxford, although no evidence of this is extant. He wrote a medical treatise, "The Castel of Health" (London: 1534), a Latin-English dictionary, and "The Boke named the Governor" (1531) which has been termed the first treatise on ethics in English. He was English ambassador to the court of the Emperor Charles V, served on several foreign missions, and was knighted by Henry VIII., being the first medical man (according to Dr. S. D. Clippingdale) to be thus honoured.

In the seventeenth century an anatomist became an ambassador. Sir JOHN FINCH (1626–82) was the son of the recorder of the City of London. One of his brothers was Lord Chancellor and first Earl of Nottingham. Finch graduated B.A. from Oxford in 1647, and with his lifelong friend, Sir Thomas Baines, obtained his M.A. at Cambridge in 1649. They both took their degree of M.D. at Padua in 1657 and under the patronage of the Grand Duke Ferdinand II of Tuscany, Finch became professor of anatomy at Pisa. Later, from 1665 to 1671, Finch was resident at Florence. In 1674 he went out to Turkey as ambassador to the Ottoman Court. In 1682 he returned to England broken-hearted at the death of Baines. Finch died in the same year and was buried in the same tomb as his friend in Christ's College Chapel, Cambridge. Dr. Archibald Malloch has written a most interesting memoir of Finch and Baines.

A highly distinguished medical ambassador was Sir CHARLES RICHARD VAUGHAN (1774–1849).

He was the sixth son of Dr. James Vaughan of Leicester and brother of Sir Henry Halford (who dropped the name of Vaughan), Sir John Vaughan, Baron of the Exchequer, and Peter Vaughan, warden of Merton. Educated at Rugby and Merton College, Oxford, he graduated B.A. in 1796, M.A. in 1798, and became a fellow of All Souls'. He attended lectures on medicine both in Edinburgh and London, and took the degree of M.B. Oxon in 1800. In the same year he was elected Radcliffe travelling fellow in the University of Oxford. He travelled—extensively and adventurously—in Europe and Asia. In 1808 on the outbreak of the insurrection in Spain against Napoleon, he went to Spain, and in 1809 published his "Narrative of the Siege of Saragossa." He conveyed to Sir John Moore the first intimation of the approach of an overwhelming force of the French Army which necessitated the famous retreat of the English to Corunna. During the Peninsular War he carried dispatches, was secretary of legation at Madrid, and acted for a time as British Minister there. In 1820 Vaughan was appointed secretary to the embassy in Paris and in 1823 was made minister-plenipotentiary to Switzerland. In 1825 he was appointed envoy-extraordinary and minister-plenipotentiary to the United States. He undertook long tours in that country during his period of office. In 1833 he was created Grand Cross of the Guelphs of Hanover. He left Washington in 1835. "His service in the United States covered one of the most interesting periods in American history. He was intimate with such men as Story and Clay; and he had to watch such burning questions as that of the boundary with Canada, the position of the South American Republics, the slave trade and the tariff." (Dictionary of National Biography, vol. lviii, p. 161). His last appointment was that of ambassador to Constantinople to replace Lord Ponsonby, but that nobleman expressing a desire to remain, Sir Charles did not go to Turkey. In 1837 Vaughan was made a privy councillor. The remainder of his life was spent in travel. He died in London in 1849.

In 1920 a second member of the medical profession, Sir AUCKLAND GEDDES, was appointed His Britannic Majesty's ambassador at Washington, and did eminent service there. Formerly principal and professor of anatomy at McGill University, Sir Auckland Geddes had been Minister of National Service, 1917–19; President of the Local Government Board, 1918; Minister in Charge of Reconstruction, 1919; and President of the Board of Trade, 1919. In a farewell speech to the "Pilgrims" he drew a striking comparison between his own career and that of his medical predecessor.

I have a list of many other medical men who have gained distinction in diplomacy and administration. It is one long record of success. The medical men chosen to represent their Sovereign, whether at foreign courts, or as administrators in the British possessions overseas, proved worthy of their high office, and maintained the influence and dignity of the British Crown.

MEDICAL POWERS BEHIND THE THRONE

Bacon in his essay "Of Friendship" observes that a high rate is set by great kings and monarchs on friendship, "not by weak and passionate princes only, but by the wisest and most politic that ever reigned; who have oftentimes joined to themselves some of their servants; whom both themselves have called friends, and allowed others likewise to call them in the same manner; using the word which is received among private men."

Among these friends of British monarchs are two physicians, upright, selfless, and able; they both enjoyed the boundless confidence of their sovereigns and played a tactful part in instructing them in their constitutional responsibilities. Their influence was wide and far-reaching, yet it was never used for their personal aggrandisement or advantage. On the contrary it was always exercised for the good of the sovereign, the welfare of Great Britain, and sound

* Part of the MacAlister lecture delivered on June 24th at the National Temperance Hospital, London.

government. They never sought the limelight. King George IV was less black than he has been painted by Thackeray and others. The monarch who won the friendship of Sir Walter Scott, kept a set of Jane Austen's novels in each of his palaces, and was eager to hear all that could be said in favour of a reprieve for prisoners condemned to death, had some great qualities. One proof of wisdom was the appointment of Sir William Knighton as his private secretary and privy purse.

Sir WILLIAM KNIGHTON (1776–1836) was born in Devonshire. After an apprenticeship to a surgeon uncle he studied medicine at Guy's Hospital and later at Edinburgh. He collected medical degrees, for he was an M.D. of St. Andrews, of Aberdeen, of Lambeth, and of Göttingen. On coming to London he soon acquired a good practice in Hanover-square, chiefly as an accoucheur. In 1809 he was domestic physician to the Marquis Wellesley, then ambassador at Madrid, who later obtained for Knighton the appointment of physician to the Prince Regent. As executor of Sir John McMahon he came into possession of some papers relating to the Prince Regent's private affairs. He placed them at once, without comment or condition, in the hands of the rightful owner. From that hour may be dated his admission to royal favour; the Prince appointed Knighton to an important office in the Duchy of Cornwall, in 1813 created him a baronet, and, later, made him Grand Cross of the Guelphic Order. On becoming private secretary and privy purse in 1822, Sir William relinquished practice. In spite of years of extravagance, he gradually reduced George IV's finances to order, caused his debts to be steadily liquidated, and had an influence over the King which few of his ministers enjoyed. Neither were Knighton's political activities restricted to royal finance and home affairs. The King frequently employed him on confidential missions abroad. He was sent to Paris in 1823 and in 1824 made three journeys in rapid succession to Paris, Spain, and Sardinia. "At a moment's notice," he writes to his wife, "the King has again ordered me abroad. . . . My situation involves very heavy penalties on me." These severe and toilsome journeys continued up to the year 1826.

Sir William Knighton attended George IV night and day in his last illness. He had a sincere attachment and esteem for his royal master. Sir William himself died in 1836. Munk terms him unquestionably a man of excellent talents, but still more conspicuous for his fine sagacity and knowledge of the world. He honestly fulfilled the duties of a very delicate position, was greedy neither of money nor honours, and kept aloof from all intrigue.

History repeats itself and seven years later another physician occupied a similar position to that of Sir William Knighton at the British Court. When King Leopold of Belgium heard of the precarious state of King William IV's health, he sent his trusted adviser, Baron Stockmar, to guide the young steps of his niece, Princess Victoria, in her approaching accession to the throne. In doing this he could have rendered no greater service to Queen Victoria and the British nation.

Baron CHRISTIAN FRIEDRICH STOCKMAR (1787–1863) came of a Swedish family and was the son of a magistrate at Coburg. After medical study and war service as an army surgeon, he practised in Coburg. When Prince Leopold married Princess Charlotte, the daughter of George IV, he brought Stockmar with him as his personal physician. Both the Prince and his wife soon grew to value "Stocky," and when Princess Charlotte died, Leopold threw himself into Stockmar's arms with the cry: "Now I am quite desolate promise never to leave me." Stockmar was Leopold's private secretary, controller of the household, and political agent until the Prince became King of the Belgians in 1831. He took a prominent part in the successive negotiations with regard to the Prince's candidature for the thrones of Greece and Belgium and secured the guarantee of Belgian neutrality by the Great Powers. For fifteen months after Queen Victoria's accession Stockmar held an unofficial position as her chief adviser. He lived at Court and had frequent interviews with the Queen and her ministers; his supposed German influence was somewhat resented by the public, although, as in Belgium, he always endeavoured to efface himself. In 1838 he accompanied Prince Albert on a tour in Italy in order to satisfy himself that the Prince would be a worthy consort for Queen Victoria. In this position he won the confidence and esteem of the Prince, who after he had become Prince Consort perpetually consulted him on behalf of the Queen on affairs of state. The advice given was always frank, ripe with experience, and dictated by the highest motives. Lord Palmerston admitted that Stockmar was the most disinterested man he ever met.

Stockmar's political ideals were the unity of Germany under Prussia and close relations between Germany and England. For these aims he worked zealously. The rest of Stockmar's life was divided between England and the Continent. He was ambassador of Coburg to the German Parliament in 1848 and died at Coburg in 1863. "Dyspeptic by constitution and melancholic by temperament," Baron Stockmar lived a life removed as far as possible from the public gaze. His political knowledge was immense; his influence in high affairs unbounded. Like his medical work his statecraft was based on sound principles and made for good.

MEDICAL PRIME MINISTERS

We have now reached the apotheosis of the medical politician, the stage at which the government of a country is entrusted to his able hands. Medical prime ministers have presided over the destinies of Denmark, France, Canada, and South Africa. Let us see how they arrived at and acquitted themselves in these responsible positions.

In October, 1766, a girl of fifteen—she was little more than a child—sat sobbing in a State coach, lumbering on the road to Harwich, for the England which she was never to see again. The flags waved, the people huzzaed, and the bells rang for the Princess Caroline Matilda, sister of King George III. She smiled bravely at the crowd through her tears and tried to console herself with the thought of her royal husband, for she had just been married by proxy to Christian VII, King of Denmark and Norway. On arriving at Copenhagen sad disillusionment awaited her. Christian was hardly in his right mind, a mental and a moral degenerate. The country was ruled by Count von Rantzau-Ascheberg and Count von Holck, the King's favourite. Queen Caroline made the best of her hard fate and in 1768 gave birth to an heir to the throne (afterwards Frederick VI). From May, 1768, to January, 1769, the King was sent on a foreign tour to England, France, Holland, and Germany in the hope that new scenes might arouse in him a sense of his responsibilities. He was accompanied by von Holck, and his suite included Dr. Johann Friedrich Struensee, as personal physician on von Rantzau's nomination.

STRUENSEE (1737–72) was of German extraction and was born at Halle where his father, Adam Struensee, a theologian of repute, was pastor. He graduated M.D. at Halle in 1756 and practised at Altona to which place his father had removed. He early imbibed the doctrines of Voltaire and Rousseau, and was an able and skilful physician. In the course of the royal tour he acquired great influence over the weak mind of the King and returned in a position

of high authority. The queen at first disliked Struensee, but after he had cured her of an illness and had successfully inoculated the infant prince for small-pox, she became greatly attached to him, as her one friend in a hostile Court. In 1770 Count Struensee (as he now was) got himself appointed Master of Requests and having superseded the Council of State became virtually dictator of Denmark. A competent administrator, he placed the control of the finances in the hands of his able brother, Charles Augustus Struensee, and immediately set about curbing the power of the nobles and introducing democratic reforms. The fatal mistake of Struensee was that he was in too much of a hurry. He suddenly introduced measures which had all the effect of a revolution before he had consolidated his own position. They included the enfranchisement of the peasants, complete religious toleration, the abolition of commercial restrictions, the reorganisation of the army, and examinations for public offices, and were received with consternation. Fortified by this state of public feeling the Queen Dowager persuaded Christian VII that Struensee was intriguing with the queen and that they were plotting to assassinate him. Struensee and his friend, Count Brandt, were arrested at dead of night, brought to trial and both beheaded and quartered on April 28th, 1772. Through the exertions of the British Minister, the unfortunate Queen Caroline was sent to Celle in Hanover where she died suddenly in 1775.

We pass from the meteoric career of Struensee to the steady star of Clemenceau, sometimes clouded and at times apparently eclipsed, but burning all the while with a fierce glow of patriotism and devotion to France.

GEORGES CLEMENCEAU (1841–1929) was born at Vendée. For three hundred years his forbears had been doctors, so in accordance with the family tradition he studied medicine at Nantes and at the University of Paris where he took his medical degree. After a brief exile in America where he married, in 1869 he settled at Montmartre. We know little of his medical activities for hardly had he begun to practise when politics claimed him. The Franco-Prussian war broke out, the Empire crashed to its fall after Sedan and out of its ruins sprang the Third Republic with Paris in a state of seige. Clemenceau was nominated mayor of Montmartre and in 1871 elected to the National Assembly where he voted against the peace preliminaries. After the Commune he lost his seat, but served from 1871–76 as a member of the Paris municipal council. From 1876–93 he was a member of the Chamber of Deputies. His life during these years resembles to some extent that of Marat. He led the extreme Left in the Chamber; he had a newspaper *La Justice* in which he wrote articles whose invective and wit were only equalled by his mordant eloquence. "The Tiger," as he was called, threw the fierce searchlight of political criticism on to the government of the day. He made and destroyed Ministries at his pleasure and according to his beliefs, all the while refusing to take office himself. Stern and incorruptible, he was a Roman father of the young Republic and his political integrity, however much disliked, was never doubted.

After 1887, mainly owing to his hostility to the Russian alliance, his influence waned and in 1893 he was not re-elected. He continued to wield the pen in his various papers with vigour as a journalist and supported Zola in the Dreyfus case. In 1902 he was elected senator for the Var, and four years later was prevailed on for the first time to take office, becoming Minister of the Interior in the Sarrier cabinet; and when that Ministry fell in the same year (1906) he became Prime Minister of France. His Government lasted until July, 1909, and during that time he cemented the entente with Great Britain. By then he had broken with the Socialist Party. Clemenceau and Raymond Poincaré were antipathetic and "The Tiger" endeavoured to prevent Poincaré's election as President of the Republic in 1913. Foiled in this attempt Clemenceau assailed Poincaré's policy in his journal *L'Homme Libre*, until patriotism forced him to support the Three Years' Military Bill. He continually warned his fellow-countrymen of the German military preparations. In the first years of the Great War he fought government after government for lukewarmness in the conduct of the war, served on senatorial war committees and heartened the nation by his uncompromising attitude. His writings and his words expressed the spirit of the French people and it became inevitable in November, 1917, that he should lead the Government once more. His "victory cabinet," save for himself, was composed almost entirely of untried men, and in it the Prime Minister took the portfolio of Minister of War. At the age of 76 the Grand Old Man of France had come into his own. Destiny had halted long on the way but the goal was reached.

Clemenceau's triumphs are too recent to be recorded in detail here. He secured the unity of command by the Allies, made Foch a Marshal of France, and presided over the Peace Conference at which he was the chief delegate. Wounded by an anarchist in 1919 who attempted to assassinate him, the brave old man exclaimed: "It is nothing." In those years he ruled France and it was not altogether out of self-sufficiency, but members of the Senate and the Chamber resented their exclusion from a share in the Peace Treaty and Clemenceau did not become President of France. He bore the disappointment philosophically, travelled in Egypt and India and in 1921 received a D.C.L. from Oxford. In the following year, at the age of 81, he made a triumphant progress in the United States. His declining years were spent at La Tranche near Ste. Hermine in Vendée writing two books, one on philosophy and one on Demosthenes. It has aptly been said of Clemenceau that "Like Foch he fired the soul of France and steeled her will."

The next medical prime minister to be mentioned is Sir CHARLES TUPPER (1821–1915) who guided the destinies of Canada with wisdom and success, and did much to bring about the federation of the Canadian provinces. He was the son of a Baptist minister of Nova Scotia and studied at Edinburgh where he graduated in medicine in 1843.

The career of the fourth medical prime minister reads like a romance; it is full of incident and adventure.

Sir LEANDER STARR JAMESON (1853–1917) was born at Edinburgh, studied medicine at University College Hospital, London, and took the degree of M.D. Lond. in 1877. He became resident medical officer at his hospital and might have anticipated a successful career as a London consultant if his health had not broken down. Sir Victor Horsley once told me that Jameson in those early days was somewhat reserved and aloof, but that all the residents in the hospital valued his advice. He worked and read assiduously and his only relaxation was whist in the evenings. In later years this led on to bridge, which proved a link of friendship between him and his former foe, General Botha. On grounds of health South Africa was advised and Jameson began practice at Kimberley in 1878. Cecil Rhodes then engaged in Empire building soon realised that in "Dr. Jim" he had found not only a skilled physician but the able administrator for whom he had been seeking. Jameson's treatment of Lobengula's gout won from that dusky monarch large concessions for the British South Africa Company and the doctor was soon busily engaged in pioneer work on behalf of the Company. In 1891 he became administrator of Rhodesia. In 1895, during the troubles at Johannesburg between the Uitlanders and the Boer Government, Jameson by orders of Rhodes stood waiting with five hundred troopers on the Transvaal frontier ready to support an anticipated rising of the

Uitlanders. The revolt was postponed, but Jameson, impatient of delay, invaded the Transvaal with his little force on Dec. 29th. It was a hopeless attempt. At Krugersdorp they were overpowered by the Boers, and after a desperate fight compelled to surrender on Jan. 2nd, 1896. Jameson was handed over to the British authorities, tried in July with his chief associates in London and sentenced to fifteen months' imprisonment. On grounds of health he was released in December. Here was failure which to most men would have spelled the end of a political career. Rudyard Kipling's poem, "If," chants the epic of Jameson's resolute soul. He saw the things he gave his life to broken and stooped to rebuild them. At the beginning of the Boer War Jameson was in Ladysmith and nearly died of enteric fever during the siege. In 1900 he was elected to the Cape Legislative Assembly and from 1904 to 1908 was Prime Minister of Cape Colony. He was made a baronet in 1911 and retired from politics in 1912. His last years were spent on war committees in London. He rests beside his friend, Cecil Rhodes, in the Matoppo Hills.

Mr. GODFREY MARTIN HUGGINS, the present Prime Minister of Southern Rhodesia, is a fellow of the Royal College of Surgeons.

A MEDICAL PRESIDENT

The man who overthrew the Manchu régime and was known as the "Father of the Chinese Republic" held a medical qualification in addition to those attributes of personality, energy, and intrigue which made him the stormy petrel of celestial politics.

SUN YAT SEN (1867–1925) or Sun Wen was the son of a Christian farmer of Hsiang Shan and himself embraced the Christian faith. In 1894 he became the first graduate of the new medical school in Hong-Kong. One of his teachers and friends there was Sir James Cantlie. Dr. Sun soon deserted medicine for politics. The years from 1895 to 1911 were filled with his active organisation of revolutionary secret societies throughout China, frequent abortive plots against the Manchu dynasty, and the dissemination of socialistic and democratic principles among his fellow-countrymen. For the most part Dr. Sun lived in exile in the United States, Japan, or England and conducted his activities by means of his agents. The price of £100,000 was set on his head by the Chinese Government and in 1896 when in London he was kidnapped and kept prisoner for several days at the Chinese Legation. The whole affair involved doctors. Sir Halliday Macartney, M.D., was Secretary of Legation at the time, Sun Yat Sen, the victim, was a doctor, and a doctor, Sir James Cantlie, secured his old pupil's release by personally approaching Lord Salisbury. Dr. Sun had succeeded in getting a note smuggled out of the Legation to Sir James.

In 1911 the Chinese Revolution occurred and Dr. Sun was called by the National Convention to be President of the new Republic on Jan. 5th, 1912. For the sake of unity he resigned shortly afterwards in favour of a more popular candidate, Yuan Shih K'ai, and became Director-General of Transport and Trade. In 1917 after Yuan's death he led the movement for an independent republic of South China. Of this he became an intermittent President, according to whether he coöperated or was at variance with the military leaders. He died of cancer of the liver in 1925 at Peking where he had been called to a national conference.

Sun Yat Sen's mercurial energy, patriotism, and zeal for reform shattered an age-long empire, which he attempted to replace by a new constitution, founded on Western democratic principles. His gifts of administration and constructive statesmanship were inferior to his talents for overthrowing an effete government. He was idolised by the mass of his fellow-countrymen who recognised his sincerity and that the aims of his life were directed towards the amelioration and improvement of their lot.

CONCLUSION

In a civilised and enlightened country the actual power of the State resides in the great body of the people. The administration of a government can never be either safe or happy unless it be conformable to the wishes of that great body. It follows therefore that the legislature of such a country is most representative when it is drawn from different callings as well as from different grades of society.

Many examples are found of successful statesmen who have succeeded in other walks of life before they took up politics. The professional politician who begins his apprenticeship to affairs on attaining his majority is becoming rarer, whilst the successful lawyer or merchant is more often encountered applying the lessons which he has learned in other spheres of activity to the business of the State. Members of the medical profession have played no small part in administration and government and have owed their success in no small degree to their previous medical training.

Dr. John Brown, physician and man of letters, recognised this quality in his essay, "Our Gideon Grays," which treats of the rural general practitioners of Scotland, in his day, "the best educated, the most useful, the most enlightened, as they certainly are the worst paid and hardest worked country doctors in Christendom." He wrote: "Were this a fitting place, we could relate many instances of this sagacity, decision, and tact, as shown by men never known beyond their own country-side, which, if displayed in more public life, would have made their possessors take their place among our public great men."

In the galaxy of medical constellations adorning the political firmament not a few owed their rise directly to recognition in their professional capacity of these qualities mentioned by Dr. John Brown. In others the influence of a previous medical training is less marked. Sir Charles Vaughan, for instance, never practised and Clemenceau rose to power through his gifts of oratory and literary expression rather than by his knowledge of medicine. For the most part these men have carried into politics the high ideals of the Hippocratic calling. The majority have not only been great, but, also, good men. We may differ from their politics, we may deplore a catastrophic error of judgment, as in the case of Jameson's raid, but we can recognise that, as a rule, they were actuated by a desire to serve mankind and to promote the well-being of the country in which they held responsibilities.

To-day in this country the doctor is playing an important and progressive part in the national life. He need not necessarily go into politics to do this because the politicians come to him for advice and counsel. It has been realised to use a proverbial saying, coined by Sir Benjamin Ward Richardson, that national health is national wealth and whatever government is in power it studies through the Ministry of Health to apply the wisdom, experience, and discoveries of medical science to the welfare of the community. The Medical Research Council is a government department under the Privy Council. A special kind of medical administrator has arrived, the medical officer of health, who guards the health of the persons in his area and advises his council on appropriate measures for securing it. The leaders of the medical profession are frequently consulted on desirable health reforms. The Health Committee of the League of Nations has done much to improve health conditions abroad and to make medical knowledge and experience international. In all these

ways the doctor exercises an influence on political thought and legislative action.

In conclusion therefore it can be said that the professional advice of the doctor in modern times is often utilised by the State not only for the benefit of individual patients but for the betterment of the whole community. It is a valuable if a more sheltered and inconspicuous rôle than that of the medical politician. Still, as it has been the endeavour of this lecture to show, when the physician lays aside the rod of Æsculapius to enter into the dust and warfare of the political arena, his previous medical training stands him in good stead, and he may rise to the height of an ambassador or govern a country as Prime Minister or President.

TUBERCULOSIS IN CYPRUS

LAST November Dr. Noel Bardswell, accompanied by Nurse Jays of the Seamen's Hospital, went to Cyprus on behalf of the National Association for the Prevention of Tuberculosis. At the annual meeting of the Association at Bristol this week Dr. Bardswell is giving an account of the work done on the island in coöperation with the public health department of the Cyprus Government.

Cyprus became a Crown colony during the late war, when Britain took over the country. Of the population of 365,000, 299,780 are of Greek extraction, 65,220 Turkish, and about 600 British. On arrival Dr. Bardswell found that while much was to be heard about the Cyprus tuberculosis problem, and its seriousness, few definite data were available. There is as yet no registration of causes of death other than "from natural or unnatural causes," and the Government has no idea as to the annual mortality from tuberculosis. Notification of the disease was introduced in 1931, but is very imperfectly observed. Accordingly Dr. Bardswell has spent five months in touring the island and studying the problem at first hand. He found among the people, of all classes, an extraordinary and unreasonable fear of the disease, which results in its concealment. Such is this fear that many will not willingly pass a consumptive patient in the street.

In his survey Dr. Bardswell examined 600 persons and tuberculin-tested 8000 children. His detailed results have yet to be worked out; but it can already be stated that the situation is not so grave as has been supposed. Though tuberculosis is scattered throughout the island and is likely to spread as the primitive people are gradually brought under European influence, there is every hope that it will be effectively controlled by appropriate methods.

The services of Dr. Bardswell and Nurse Jays are to be at the disposal of the Cyprus authorities for another year.

AN IMPROVED SPECTROSCOPE

THE effect of inhalation of carbon monoxide on hæmoglobin is well known and the pink colour developed when carboxyhæmoglobin is formed accounts for the florid complexion of persons who have succumbed to this form of poisoning. The spectrum of the pink compound differs appreciably from that of the unaltered hæmoglobin, in that the two absorption bands are nearer the violet end of the spectrum, the displacement being related to the degree of saturation of the blood with carbon monoxide. The displacement is not great and any device that will increase it or render the bands more distinct must add to the precision of determinations made by this spectroscopic method.

The Hartridge reversion spectroscope, by presenting to the eye two spectra, one above the other and with the directions reversed, doubles the length of the displacement, and consequently of the sensitiveness of measurement. It has for some years been used by workers concerned with measurements of carbon monoxide in blood. Mr. R. C. Frederick, of the Royal Naval College, Greenwich, has now improved the Hartridge instrument in some details that make it more exact. The height of the bands has been increased, so that alignment is more easy and accurate, whilst the introduction of an adjustable slit for the incoming beam of light enables the bands to be more sharply defined. Since this involves a narrower beam the lighting system is made more powerful. Other improvements, mainly in mounting and setting up the instrument make for convenience of working. The modified instrument and the method of using it are described in the June issue of the *Analyst* (p. 452).

VOLUNTARY USEFUL AIDS

SHOCKED by newspaper accounts of children fatally burned through being left in a house alone, Mrs. Clara Hardy, of Manchester, formed an organisation known in London as Voluntary Useful Aids, who without payment look after other people's children, visit old people and invalids and do other acts of kindness. There are now eight branches, but London needs a new honorary organiser. "Who will give her time and a little money for postage to bring joy to many?" Letters should be addressed to Mrs. Hardy, 7, Darley-avenue, West Didsbury, Manchester.

A LOST ENGRAVING

Dr. NEVILLE M. GOODMAN writes: I have been trying to trace an engraving—an aquatint I think—seen for the first and last time at Cambridge some fifteen years ago. The subject was a secret anatomical dissection. A surgeon was beginning to dissect the body of a woman: a skin-flap, turned down from the dorsum of the right hand, revealed the tendons which strongly reflected the light of a torch thrust into the abdomen: the chiaroscuro was most striking. For some reason which I cannot now remember I have the impression that the picture was Spanish. I should be grateful if any of your readers could give me any information.

A BOOK ABOUT DROITWICH.—An attractive account of Droitwich Spa has been produced by Charles W. Hobson Ltd. (9, Park-place, London, S.W.1). It is in two parts, headed the Cure and the Convalescence, and it contains all the information intending visitors and their friends are likely to require. The spa offers (1) hot saturated brine baths and natural salt therapeutic pools and douches, (2) effervescent salt baths at cooler temperatures, and (3) tonic aerated brine baths. The saturated brine baths are used chiefly for rheumatic disorders and in the re-education of paralysed or wasted limbs, while the effervescent and aerated baths are valuable in circulatory disorders.

THE IRISE EYE LOTION BATH is built up of two parts: the part that fits the eye is of rubber, while the part that contains the fluid is of glass. The rubber eyepiece fits closely and prevents leakage or discomfort when the eyelids blink. The lower glass reservoir has the merit of being transparent and easily cleaned. The makers are W. Stevens and Co., 31, East Hill, Wandsworth, S.W.

MEDICAL WOMEN'S INTERNATIONAL CONGRESS.—The fourth congress of the Medical Women's International Association takes place in Edinburgh from July 13th to 18th. The inaugural meeting will be held at 2.30 P.M. on Wednesday, July 14th, in the McEwan Hall, University of Edinburgh. The speakers include Dr. Alma Sundquist, the president of the Association, Sir Thomas Holland, vice-chancellor of the University of Edinburgh, Sir Norman Walker, Sir William McKechnie, and representative medical women from different countries. Further information may be had from the local congress secretary, 2, Chester-street, Edinburgh.

Vacancies

For further information refer to the advertisement columns

Albert Dock Hosp., Connaught-road, E.—Res. M.O., £110.
Barnsley, Beckett Hosp. and Dispensary.—Jun. H.S., £200.
Bath and Wessex Children's Orthopædic Hosp., Combe Park.—H.S., at rate of £120.
Bath, Royal United Hosp.—H.P., at rate of £250. Also two H.S.'s, each £150.
Benenden, National Sanatorium.—Res. Asst. M.O., £350.
Birmingham City Education Committee.—School M.O., £1100.
Bolingbroke Hosp., Wandsworth Common, S.W.—H.P., at rate of £120.
Bradford New Royal Infirmary.—Res. M.O. and Asst. Pathologist, £225.
Bradford Royal Eye and Ear Hosp.—Two H.S.'s, each £180.
Bridport and Lyme Regis Boroughs, &c.—M.O.H., £800.
Brighton, Royal Alexandra Hosp. for Sick Children.—H.P., 120.
Bury Infirmary, Lancs.—Res. Surg. O., £300.
Cambridge, Addenbrooke's Hosp.—H.P. and H.S., each at rate of £130.
Canterbury, Kent and Canterbury Hosp.—H.P. and H.S., each at rate of £125.
Cardiff, King Edward VII Welsh National Memorial Assoc.—Res. Asst. Tuber. M.O. for Sully Hosp., £500.
Cardiff, University College of S. Wales and Mon.—Asst. Lecturer in Dept. of Anatomy.
Carlisle, Cumberland Infirmary.—H.S., at rate of £155.
Central London Throat, Nose, and Ear Hosp., Gray's Inn-road, W.C.—Hon. Assts. in Out-patient Dept.
Cheltenham General and Eye Hosps.—H.P., £150.
Chesterfield and North Derbyshire Royal Hosp.—H.S., at rate of £150.
Colchester, Essex County Hosp.—H.S., £175.
Croydon County Borough.—Asst. M.O.H., &c., £500. Also Asst. M.O. for Obstetrics, £300.
Doncaster Royal Infirmary.—H.S., £175.
Eastbourne Royal Eye Hosp., Pevensey-road.—H.S., £100.
Folkestone, Royal Victoria Hosp.—Jun. Res. M.O., at rate of £120.
Gloucestershire Royal Infirmary and Eye Institution.—H.S. and H.P., each at rate of £150.
Guildford, Royal Surrey County Hosp.—H.S., at rate of £150.
Guy's Hosp., S.E.—Clin. Asst. for Radiology Dept., at rate of £150.
Hampstead General and N.W. London Hosp., Haverstock Hill, N.W.—H.P., Cas. M.O., and Cas. Surg. O., each at rate of £100.
Hertford County Hosp.—H.S., at rate of £180.
His Majesty's Colonial Service.—M.O.H. for Trinidad, £600.
Hosp. for Consumption and Diseases of Chest, Brompton, S.W.—H.P., and H.P. for Sanatorium, Frimley, each £50.
Hosp. for Tropical Diseases, Gordon-street, W.C.—Res. Med. Supt., £400.
Hosp. for Women, Soho-square, W.—Hon. Cons. Phys. to In-patient Dept.
Hull Royal Infirmary.—Second H.P., H.S., and H.S. to Ophthalmic, &c., Depts., each at rate of £150.
Ilford Borough.—Two Asst. M.O.H.'s, £500 and £400.
Ilford, King George Hosp.—Two H.S.'s, each at rate of £100.
Ipswich, East Suffolk and Ipswich Hosp.—Cas. O., at rate of £144.
Keighley and District Victoria Hosp.—Res. M.O., at rate of £180.
Kettering and District General Hosp.—H.S. and H.P., at rate of £175 and £150 respectively.
Kidderminster and District General Hosp.—Jun. H.S., £100.
King's College Hosp., Denmark Hill, S.E.—Registrar to Children's Dept. and M.O. to Rheumatism Clinic.
Knowle Mental Hosp., Fareham, Hants.—Jun. Asst. M.O., £350.
Leeds Hosp. for Women.—Hon. Anæsthetist.
Liverpool Royal Children's Hosp., Myrtle-street.—Res. Cas. O. at rate of £250. Res. M.O. and Res. Surg. O. for Heswall Branch, each at rate of £120. Also two Res. H.P.'s and two Res. H.S.'s for City Branch, each at rate of £100.
London County Council: Consultant and Specialist Services.—Part-time Consulting Dermatologist, £125.
London County Council.—Res. Med. Supt. for Eastern Hospital, £1100. Asst. M.O.'s (Grade I), each £350. Asst. M.O.'s (Grade 2), each £250. Also Temporary Dist. M.O. for Hampstead. Also Sen. Asst. M.O.'s (Grade II), £500, and Asst. M.O.'s, Grade I, £350.
London Homœopathic Hosp., Great Ormond-street.—Physician for Diseases of Children.
Manchester, Ancoats Hosp.—Cas. O., £250. Also H.S. to Ear, Nose, and Throat Dept., at rate of £100.
Manchester, Booth Hall Hosp.—Res. Asst. M.O., at rate of £200.
Manchester, Crumpsall Hosp.—Res. Asst. M.O., at rate of £260.
Manchester, Northern Hosp.—Res. Surg. O., £150. Also Res. H.P. and Res. H.S., each at rate of £100.
Manchester, Prestwich Mental Hosp.—Locum Tenent M.O., 7 guineas per week.
Manchester, St. Mary's Hosps.—Asst. Res. Obstet. O. for Whitworth-street West Hosp., £100.
Manchester Victoria Memorial Jewish Hosp., Cheetham.—Res. Surg. O., £250.
Marie Curie Hosp., 2, Fitzjohn's-avenue, N.W.—Asst. Director, from £500.
Metropolitan Hosp., Kingsland-road, E.—Cas. O. and Res. Anæsthetist, £100.
Middlesex County Council.—Sen. Dental Officer, £700.
Mogden Fever Hosp., Isleworth.—Asst. Res. M.O., £250.
Mount Vernon Hosp., Northwood.—Asst. H.S., £150.
Newcastle-upon-Tyne, Hosp. for Sick Children.—H.P. and H.S., each at rate of £100.
New Zealand, General Hosp., Auckland.—Deputy Med. Supt., £800.
Nottingham and Midland Eye Infirmary.—Res. H.S., £200.
Nottingham City Hosp.—Asst. Surg. O., at rate of £250.
Nottingham General Infirmary.—Res. Cas. O., at rate of £150.
Oldham Municipal Hosp.—Res. Asst. M.O., at rate of £200.
Oldham Royal Infirmary.—Two H.S.'s. Also Cas. O. and H.S. to Fracture Dept., each at rate of £175.
Plymouth, Prince of Wales's Hosp., Devonport.—Jun. H.S., at rate of £120.
Plymouth, Prince of Wales's Hosp., Greenbank-road.—H.S., at rate of £120.
Pontefract General Infirmary.—Jun. Res. M.O., at rate of £150.
Port of Spain City Council.—M.O.H., £800.
Portsmouth City Mental Hosp.—Locum Tenens A.M.O., 7 guineas weekly.
Portsmouth Royal Hosp.—Fourth H.S. and Cas. O., each at rate of £130.
Preston and County of Lancaster Royal Infirmary.—H.S. to Eye, Ear, Nose, and Throat Dept., at rate of £150.
Preston, Sharoe Green Hosp.—Jun. Asst. Res. M.O., at rate of £100.
Princess Louise Kensington Hosp. for Children, St. Quintin-avenue, W.—H.S., at rate of £120–£150.
Queen Mary's Hosp. for the East End, E.—Clin. Asst. to Skin Dept.
Redhill, Surrey County Hosp.—Res. Asst. M.O., at rate of £375.
Rochdale Infirmary and Dispensary.—Sen. H.S., £250.
Rotherham Hosp.—H.S. for Ophth. and Ear, Nose, and Throat. Depts., £150.
Royal Free Hosp., Gray's Inn-road, W.C.—In-patient Obstetric Asst.
Royal Masonic Hosp., Ravenscourt Park, W.—Two Res. Surg. O.'s, each at rate of £250.
Royal National Orthopædic Hosp.—Two H.S.'s for Country Branch, each at rate of £150.
Royal Northern Hosp., Holloway, N.—H.P. and Obstet. H.S., each at rate of £70.
Royal Waterloo Hosp. for Children, Waterloo-road, S.E.—Hon. Clin. Asst.
St. Albans, Herts, Hill End Hosp. for Mental and Nervous Disorders.—H.P., £165–£200.
St. Leonard's-on-Sea, Buchanan Hosp.—Jun. H.S., £125.
St. Paul's Hosp. for Urological and Skin Diseases, Endell-street, W.C.—H.S., at rate of £100.
Salford, Hope Hosp.—Asst. Res. M.O., at rate of £200.
Salisbury General Infirmary.—Res. M.O., £250.
Sheffield Children's Hosp.—H.S., £100.
Sheffield, Jessop Hosp. for Women.—Res. M.O., at rate of £150.
Sheffield Royal Hosp.—Clin. Asst. to Ophthalmic Dept., £300. Also Locum, at rate of £80.
Sheffield Royal Infirmary.—H.S. and Aural H.S., each at rate of £80. Ophth. H.S., at rate of £120. Cas. O., at rate of £150. Also H.S. to Orthopædic, &c., Service, £80–£100.
South London Hosp. for Women, Clapham Common, S.W.—Locum Pathologist.
Southampton, Royal South Hants and Southampton Hosp.—Cas. O., and Res. Anæsthetist and H.S. to Ear, Nose, and Throat Dept., each at rate of £150.
Stoke-on-Trent, Longton Hosp.—H.S., £160.
Stoke-on-Trent, North Staffordshire Royal Infirmary.—Hon. Asst. Phys. Hon. Asst. Surg. Also Hon. Asst. Aural Surg.
Sunderland Children's Hosp.—H.P. and H.S., each £120.
Swansea General and Eye Hosp.—H.S., at rate of £150.
Victoria Hosp. for Children, Chelsea, S.W.—H.P. and H.S., each at rate of £100.
Weir Hosp., Balham, S.W.—Jun. Res. M.O., £150.
West End Hosp. for Nervous Diseases, Gloucester Gate.—Two Res. H.P.'s, each at rate of £125. Also Hon. Med. Psychologist and Hon. Clin. Asst.
West London Hosp., Hammersmith-road, W.—Non-Res. Cas. O., £250.
West Middlesex County Hosp., Isleworth.—Asst. Pathologist, £650.
Windsor, King Edward VII Hosp.—H.S. and Cas. O., each £100.
Wolverhampton Royal Hosp.—Asst. Res. M.O. for Gyn. and Obstet. Dept., at rate of £100.
Wrexham and East Denbighshire War Memorial Hosp.—Res. H.S., at rate of £150.
York County Hosp.—H.P., £150.

Medical Referee under the Workmen's Compensation Act, 1925, for the Margate and Ramsgate County Court Districts (Circuit No. 49). Applications should be addressed to the Private Secretary, Home Office, Whitehall, London, S.W.1, before July 18th.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Bethesda (Caernarvon), Talybont (Cardigan), and West Drayton (Middlesex).

ROYAL EYE HOSPITAL—The clinical society of this hospital will hold a meeting on Wednesday, July 7th, at 5.30 P.M., when there will be a discussion on the work in continental eye clinics. Mr. L. H. Savin will also read a paper on Scandinavian eye clinics which he has recently visited.

THE LATE DAME SARAH SWIFT.—A service was held on Thursday in the chapel of Guy's Hospital in memory of Dame Sarah Swift, G.B.E., who died on June 27th at the age of 83. After retiring in 1909 from the position of matron at Guy's she was recalled to active service in August, 1914, as matron-in-chief of the British Red Cross Society and Order of St. John, and became responsible for the inspection of Red Cross hospitals at home and abroad.